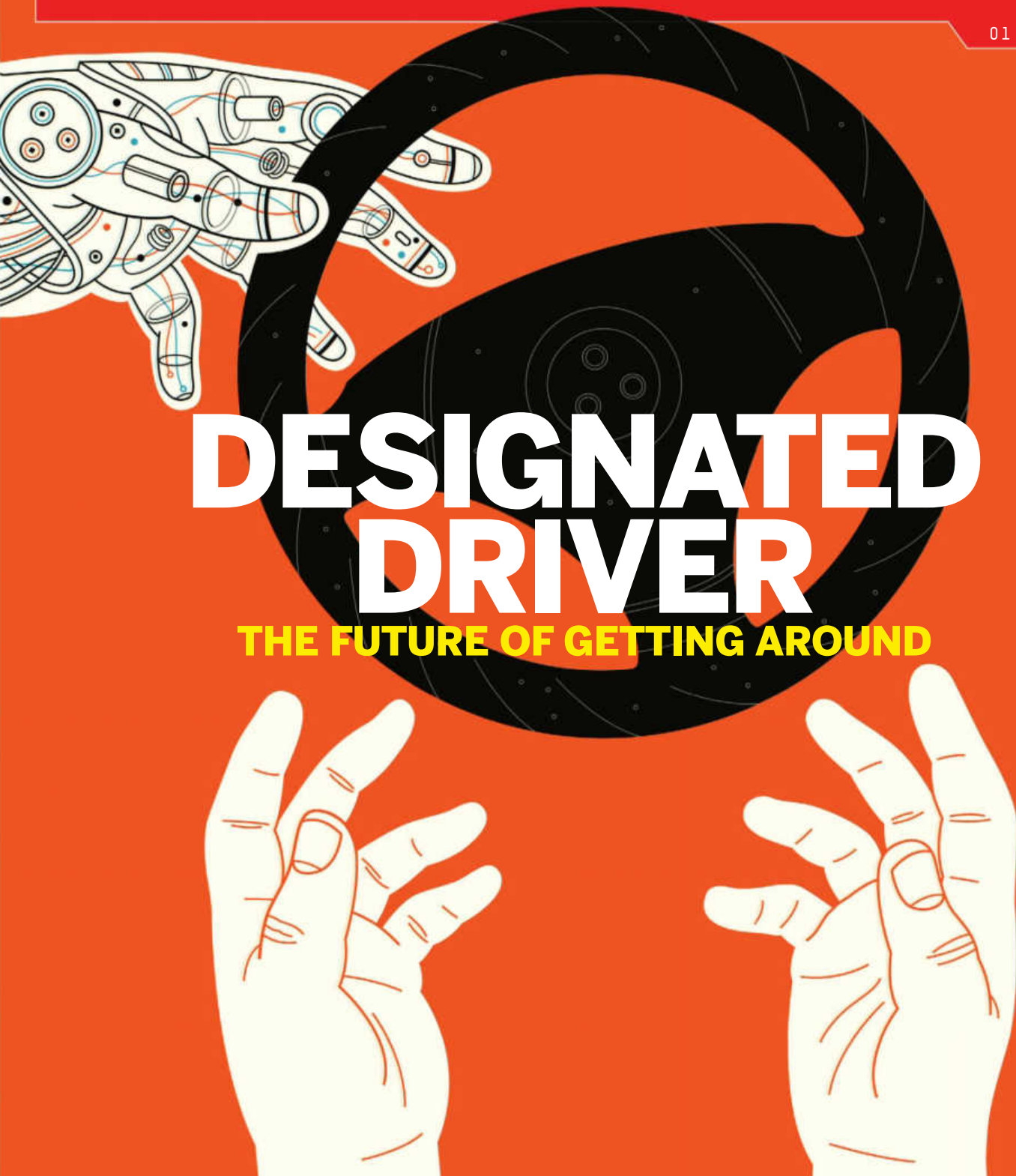


Islamic World Rift/The Prediction Machine

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STOPPING TRAFFIC:
Los Angeles Mayor Eric Garcetti thinks he can tame the four-wheeled beast through a series of measures that will get Angelenos cycling, using public transportation and walking.



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BIG SHOTS

MEXICO

In Turn-around

Mexico City—Mexican security forces escort Joaquín Guzmán, the world's most wanted drug trafficker, on January 8. Authorities captured Guzmán, known as El Chapo, six months after he escaped from a maximum-security prison. They zeroed in on his location after learning of actor Sean Penn's interview with the leader of the Sinaloa Cartel. In an article for *Rolling Stone*, the actor quoted El Chapo as saying: "I supply more heroin, methamphetamine, cocaine and marijuana than anybody else in the world. I have a fleet of submarines, airplanes, trucks and boats." The United States has requested Guzmán's extradition.



SUSANA GONZALEZ



USA

Obama Tears Up

Washington, D.C.—With Vice President Joe Biden looking on, President Barack Obama delivers a tearful statement on January 5 concerning an executive action aimed at reducing gun violence. The order includes mandatory background checks by firearms dealers, stricter enforcement of current gun laws, increased mental health treatment and calls for further research on gun safety technology. Obama is expected to make gun control a key issue during his last year in the White House. Many Republicans immediately deemed the order an overreach, while Democrats hailed it.



CARLOS BARRIA

USA

Taking a Powder

Burns, Oregon—A member of an armed group that has occupied Malheur National Wildlife Refuge rides his horse on January 7 after a light snowfall. The group took over an empty building on the wildlife refuge on January 2 to protest the prison sentences of Dwight and Steve Hammond for arson after fires they set spread to federal land. Among the protesters was Ammon Bundy, son of rancher Cliven Bundy, who led a standoff with the Bureau of Land Management in 2014. In a news conference, Ammon Bundy said the broader goal was to “restore and defend the Constitution.” The FBI held off intervening, hoping to avoid the kind of violence seen in Waco, Texas, in 1993.



ROB KERR





ENGLAND

The Man Who Fell to Earth

London—Mourners and media gather around a mural of David Bowie in London's Brixton district on January 11 to mourn his death. The legendary British musician had privately battled cancer the past 18 months and had just released *Blackstar* on January 8, his 69th birthday. The album caps a career that began in 1967 and included over two dozen studio albums. Known for his innovative music, as well as his iconoclastic, androgynous fashion sense and performing style, he was a pioneer of the glam-rock genre, and his penchant for reinvention helped redefine the boundaries of rock music.



CARL COURT







PAGE ONE

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MIDDLE EAST

GUNS

NORTH KOREA

CRIME

POLITICS

THE ISLAMIC WORLD'S FAST BOIL

Saudi Arabia's killing of a Shiite cleric has intensified an already deadly rivalry with Iran

THE RECENT TIT-FOR-TAT clashes across the Middle East have made the first days of 2016 seem a lot like 1979. That was the year Ayatollah Ruhollah Khomeini led Iran's transformation from an autocratic state ruled by the Shah into the Islamic Republic of Iran. Violence wracked the region in the immediate aftermath of the changeover. Mobs overran embassies, and Sunni Arab governments swore to turn their backs on the new theocratic regime in Tehran. Oil-rich despots throughout the region poured money and weapons into proxy conflicts all over the Middle East, unleashing a wave of destabilizing, sectarian violence that eventually died down but never went away.

The event that turned back the clock and made an already roiling situation boil over took place on January 2, when Saudi Arabia killed a dissident Shiite cleric, Nimr al-Nimr, in a mass execution of 47 people. Iranian mobs attacked Saudi Arabia's diplomatic missions in Tehran and Mashhad. A flurry of escalations followed: bombings in Yemen, diplomatic relations severed, promises

of retaliation by both Riyadh and Tehran.

Although they're an alarming throwback to 1979, these incidents are just the most recent round in a long, destructive struggle between two powers apparently set on pulling the entire region into a conflict between a Sunni bloc and a Shiite crescent. Both are seeking a winner-takes-all victory. "All the sectarian rhetoric is becoming a self-fulfilling prophecy for these regimes who love to play the sectarian card," says Farea al-Muslimi, a Yemen analyst at the Carnegie Middle East Center in Beirut. "The Saudis feel betrayed, and now they feel like they must do something, even if it's the wrong thing."

The two oil-rich theocracies—one Shiite and one Sunni—are vying for regional dominance. The feud between Iran and Saudi Arabia has fueled sectarianism, resulted in an increase in the flow of weapons and funding to extremists, and spawned numerous militant movements.

Neither side shows any sign of backing down. Iran's supreme leader, Ayatollah Ali Khamenei,

BY
**THANASSIS
CAMBANIS**
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MOHAMMED AL-SHAIKH/AFP/GETTY

DIVISIONS: The execution of Saudi cleric Nimr al-Nimr sparked protests among Shiites in Bahrain, above, but the Sunni rulers of Bahrain joined Saudi Arabia in cutting off ties with Iran over protests there.



promised “divine justice” after al-Nimr was executed. Saudi Arabia’s monarchy, meanwhile, put out the word through allies that “enough is enough” and that it would no longer hesitate to stand up to Iran.

But even more of a threat to the region than this Iran vs. Saudi Arabia contest is the likelihood that the two countries are lashing out at each other from positions not of strength but of weakness—and in their efforts to dominate each other they could cause the entire region to fracture and spin out of control. The two autocracies appear set on ratcheting up their clash, consequences be damned. But it also seems clear that neither Iran nor Saudi Arabia can control the wars, proxy militias and ideological movements their conflict has unleashed. Even if Tehran and Riyadh calm down, the armed groups they have spawned could continue fighting throughout the region.

If there is a single event that sparked this flare-up, it was the 2015 Iranian nuclear deal, which saw Iran agree to dismantle its nuclear program in exchange for the lifting of sanctions. The agreement was clearly good for global security, but it also dramatically changed the region. Saudi Arabia, which views itself as the Sunni world’s banker, oil baron and spiritual chief, felt

abandoned by its most important ally, the United States, widening a rift that opened in 2011 when Washington supported popular uprisings against Arab tyrants during the Arab Spring.

When the Obama administration was pursuing its nuclear accord with Iran, Saudi Arabia felt betrayed, and now the U.S. was preparing to help the Saudis’ biggest regional rival by lifting sanctions. At almost the same time, oil from fracking and other sources has made the U.S. a major oil state, no longer directly dependent on Middle Eastern—particularly Saudi—oil.

King Salman, Saudi Arabia’s new monarch, took an uncharacteristically confrontational approach with the U.S. His inner circle lobbied against the Iran deal, and in March—over strenuous American objections—Saudi Arabia launched a massive assault on Iranian-backed rebels in Yemen. By the time the nuclear deal was inked in July, the Saudis were dangerously close to a rupture with Washington.

Some Western diplomats said the Saudis’ decision to execute al-Nimr—when they knew full well it would antagonize Iran (and the U.S., among others)—seemed specifically designed to thwart the major Syrian peace conference scheduled for January 25 in Geneva. Peace talks without Saudi

+ ACTION AND REACTION: Iranians took to the streets to protest Saudi Arabia’s execution of Nimr al-Nimr, and some stormed the Saudi embassy in Tehran, prompting Saudi Arabia to cut ties to Iran.

Arabia and Iran, powerful backers of opposing sides in the war, would be a waste of time.

Saudi Arabia's bellicose maneuvers have strained its relationship with Washington. U.S. diplomats and security officials say they are angry about citizens of Saudi Arabia and other Gulf countries financially backing jihadis in Syria, Libya and elsewhere in the region.

But the Saudi royal family, if it is to survive, must keep the country's powerful extremist Sunni (or Wahhabite) clerical establishment on its side. That means that the monarchy wants to persuade Washington that Saudi Arabia is a firm counterterrorism ally while demonstrating to its subjects at home that it will protect the conservative religious core of the Wahhabi sect.

The execution of the Shiite cleric was "local politics," says one Arab analyst who works closely with the Saudi government and spoke on condition of anonymity because he didn't want to anger officials. "They don't want to lose more support to ISIS, so they need to show they can be more hard-line than ISIS. That's why they killed Sheikh Nimr."

The execution was also a way for Saudi Arabia to block what it sees as Iranian ascendance. After almost five years of stalemate in Syria, President Bashar al-Assad's regime has been winning back territory, thanks to significant military support from Tehran and Moscow. Iraq, a Shiite-majority neighbor, has also become an Iranian ally. In Lebanon, the Iranian-backed Shiite militant group Hezbollah is stronger than ever, and the nuclear deal with the U.S. and other world powers will greatly boost Iran's revenues and reintegrate Iran's Islamic Republic into the global economy and the international community.

But a closer look suggests all is not so rosy for Iran. Abroad, it has lost much of the support and soft power it cultivated directly after its 1978-1979 revolution. In the mid-2000s, Iran's so-called axis of resistance—an informal coalition of Iran, Syria, Hezbollah and the Sunni-dominated group Hamas—enjoyed widespread popularity among Sunni and Shiite Muslims.

Today, polls show that Iran's popularity in an increasingly polarized region has evaporated. Like Saudi Arabia, with its backing of rebels in Syria and its military campaign to support the government in Yemen, Iran has overreached and become inextricably involved in wars that are unlikely to have an outright victor. Hezbollah openly took sides with the Assad regime and has lost its Pan-Arab luster.

And Iran, despite the considerable resources of its expeditionary Quds force and the fearsome reputation of its commander, General Qassem Soleimani, has been unable to guarantee the survival of the Syrian regime, in spite of the recent military successes of Assad's forces and their allies. In Yemen, the side Iran supports, the Houthis, is steadily losing ground in the face of the Saudi-led assault.

"Iran and Saudi Arabia have managed to establish a mutually destructive cycle of conflict in which both sides are damaging their future regional position," says Michael Hanna, a senior fellow at the Century Foundation and co-author of a recent article titled "The Limits of Iranian Power" in the journal *Survival: Global Politics and Strategy*.

"While most assume that Iran is much better positioned, it is much more isolated than is generally recognized," says Hanna, who argues that Iran's alliances are under extreme strain. "Its soft power in a majority Sunni Arab world

"THE SAUDIS FEEL LIKE THEY MUST DO SOMETHING, EVEN IF IT'S THE WRONG THING."

has collapsed, and it is now limited to exercising hard power in sectarian conflicts."

Whatever happens in this round of the Saudi-Iranian rivalry, things promise to get worse, not better. "The policies of the Saudi regime will have a domino effect, and they will be buried under the avalanche they have created," said Iranian Revolutionary Guards Brigadier General Hossein Salami on January 7, according to Iran's state-run Press TV. "If the Al-Saud regime does not correct this path, it will collapse in the near future."

Both sides frame their competition more and more in absolutist, sectarian terms, and both sides have proved less and less able to manage the endless crises in the region. Iran and Saudi Arabia are doubling down on a war neither can win. ■



KIM'S NUCLEAR TRUMP CARD

North Korea's nuclear weapons program is expanding—and China won't do much about it

YOU'VE GOT TO hand it to the North Koreans; they do it all the time. The rest of the world is focused on other dangerous places and issues: an unfolding civil war in the Islamic world; spreading jihadi terrorism; refugees streaming by the millions out of war-torn Syria; China's stock market crashing; and oil prices plummeting.

Then, on cue, pudgy little Kim Jong Un does something—just as his father, Kim Jong Il, used to—that reminds us: oh, damn, *that* place again.

North Korea conducted its fourth test of a nuclear weapon on January 6. Pyongyang immediately announced that the bomb it detonated was a two-stage thermonuclear device, otherwise known as a hydrogen bomb. The likelihood that this was *not* an H-bomb is what officials in Washington, and their echo chamber in the mainstream media, focused on in the test's immediate aftermath.

Experts believe the bomb Pyongyang detonated was probably a hybrid, in which hydrogen isotopes are used to increase yields on conventional fission devices. But as North Korea watcher Stephan Haggard of the Peterson Institute for International Economics says, "The main point is not in the technical details but in the obvious: North Korea is actively developing its nuclear capacity and in parallel its missile capabilities as well."

As in the aftermath of the previous three tests, the outside world now focuses on what it can

do about North Korea and its nuclear program. And however depressing it may be to hear, the likely answer (again) is: not nearly enough to persuade Pyongyang to get rid of its nukes.

The central dilemma Washington and its allies confront is this: Pyongyang believes the possession of nuclear weapons is a guarantor of regime survival. The maintenance of the Kim family dynasty is the top priority in Pyongyang. Everything else is secondary. And having nukes in his pocket—10 to 16 of them already, according to intelligence analysts, with dozens more coming—is Kim's ultimate security blanket. No one will start a war on the Korean Peninsula as long as he's got them. This is no doubt why the North Korean government, in its statement announcing the test, stressed that Pyongyang would be a "responsible" nuclear power and would not use its weapons first in any conflict. The outside world—China included—views that pledge with great skepticism.

There was a time when it *seemed* as if the North was amenable to trading away its nuclear program for money and energy. President Bill Clinton negotiated the so-called Agreed Framework in 1994, which was supposed to do just that. And the regime did take some steps to rein in its ability to produce plutonium-fueled nuclear bombs. But early in the George W. Bush administration, the U.S. discovered that Pyongyang had a secret program to develop a uranium



BY
BILL POWELL



**PENINSULA
POLITICS:**
North Korea's
announcement
it had tested a
hydrogen bomb
sent shock waves
through South
Korea, above,
though experts
doubt it was really
an H-bomb.

bomb, and whatever progress that had been made toward a nuclear resolution blew up. In Bush's second term, the White House was persuaded by its allies—South Korea and Japan—to join China in the so-called Six-Party Talks, which again tried to push the nuclear boulder up the hill.

Those talks failed, and President Barack Obama concluded in his first term that exerting the effort to get Pyongyang to stand down on its nukes was not likely to pay off. Instead, he directed his diplomatic energy toward Iran, which had signaled a willingness to make a deal on its nuclear program.

Now comes, as Haggard says, the familiar script: international condemnation of North Korea, a convening of the U.N. Security Council,

HAVING NUKES IN HIS POCKET IS KIM JONG UN'S ULTIMATE SECURITY BLANKET.

talk about tightened sanctions and all eyes looking hopefully toward Beijing. China could, if it wishes, inflict enough economic pain, as Pyongyang's only significant trading partner, to prompt North Korea to "alter its trajectory," as Haggard puts it.

There are steps the United States and other

governments can take to try to coerce Kim into better behavior. Obama, has described North Korea as one of the most heavily sanctioned countries in the world, but former CIA analyst Bruce Klingner says that's not true. "Washington has targeted fewer North Korean entities than those of the Balkans, Burma, Cuba, Iran and Zimbabwe," he says. Klingner argues that the U.S. should sanction all foreign companies and financial institutions assisting North Korea in its nuclear and missile programs. He also argues that Washington should ban financial institutions that conduct business with North Korean violators of U.N. resolutions from access to the U.S. financial network—a step that would be aimed largely at China. And, in fact, both houses of the U.S. Congress have legislation ready to go that would do exactly that—legislation that to date the Obama administration has opposed.

So the central question, as it has been after every previous nuclear test, is: What will Beijing do in response to Pyongyang's latest provocation? The initial response was not encouraging to those hoping for a "We're fed up, let's bring the hammer down" moment. The foreign ministry called for a resumption of the Six-Party Talks—a response that exasperated one longtime Japanese diplomat who works on North Korea. "We're going to need a lot more than that from the Chinese," he said.

There is little doubt that China can hurt the North. It can shut down oil and gasoline exports overnight, as well as the trade in goods that goes back and forth between the countries every day. If that was coupled with efforts from South Korea and Russia to shut down their limited economic engagement with Pyongyang, North Korea would pretty much be left to freeze in the dark.

The question is: Would that matter? Recall that in the late 1990s, thanks not so much to economic sanctions but to horrendous domestic policy in Pyongyang, tens of thousands of North Koreans perished in a mass famine. Desperate refugees poured across the border into



+ HIS FATHER'S SON: Kim Jong Un has been determined to prove his toughness since his father died in 2011.

China. And yet the regime, then run by Kim's father, never buckled.

Pyongyang deserves censure for again violating U.N. strictures against both its nuclear and missile programs. But as in the past, there are limits on how far Beijing will go. In an era in which its economic miracle is fading and its labor market weakening, the last thing China wants is to become a magnet again for signifi-

PYONGYANG STRESSED IT WOULD BE A "RESPONSIBLE" NUCLEAR POWER AND WOULD NOT USE ITS WEAPONS FIRST IN ANY CONFLICT.

cant numbers of refugees. And Beijing still, geopolitically speaking, would rather North Korea exist than not. (China does not see much advantage to a unified Korea allied with the U.S. on its border.) Combine all that with Pyongyang's obvious determination to remain a nuclear power and reality intrudes: With Kim Jong Un and North Korea, what you see is what you're going to get—over and over again. **n**



The Doctor Is In...and Down

RESIDENCIES SEEM TO BE MAKING PHYSICIANS-IN-TRAINING DEPRESSED

Every March, aspiring doctors around the country wait with feverish enthusiasm to receive their match envelopes. Inside, they'll find the answer to a question they've been pondering through four years of medical school and several months of applications and interviews: Where will they spend the next few years as interns and residents?

But after some time in their newly assigned—and grueling—positions, the excitement wears off. More than a quarter report symptoms of depression, according to a recent paper published in *JAMA*.

Dr. Srijan Sen of the University of Michigan worked with colleagues to analyze data from 54 peer-reviewed studies from 1963 through 2015 and found that the overall rate of depression or depressive symptoms among interns and residents was 28.8 percent. In contrast, 6.6 percent of adults in the U.S. experienced a major depressive episode over the course of 2014.

There's something specific about the intern experience that's making doctors depressed, says Sen, who is also the principal investigator on the Intern Health Study. That

project has tracked stress and depression in over 10,000 new doctors and shows that depression rates increase from 3 percent before the beginning of residency to 26 percent during the first year.

The long hours and sleep deprivation of an internship are infamous, but they're not the only problem, says Dr. Thomas Schwenk, dean at the University of Nevada School of Medicine, Reno, who authored an editorial published in *JAMA* in conjunction with Sen's study. During residency, new doctors face huge stresses, Schwenk says, and deal

with ethical dilemmas, technological decisions and patient expectations. Unlike in most jobs, the stakes can be life or death. "There's a tremendous amount here that we're not helping them internalize," he says of doctors. "These are very traumatic experiences that they have."

Although "there has been little willingness or energy to change the system," Schwenk wrote, this data showing how rampant depression can be among doctors "suggests there may be no choice."

BY
STAV ZIV
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SOURCE: *JAMA*, 2014 NATIONAL SURVEY ON DRUG USE AND HEALTH



THERE'S FAIR, AND THEN THERE'S FAIRBANKS

Four men in prison for murder had to make a cruel choice in order to be freed

MARVIN ROBERTS was dancing. The wedding reception inside Eagles Hall was still swinging when the teenager arrived late on a cold October night in Fairbanks, Alaska, in 1997. The high school valedictorian was ready to kick back after spending the summer on a wildfire crew and then going on a two-week river trip with his father that fall, during which Roberts shot a young bull moose.

Around the time Roberts was with his third dance partner, a woman smoking on a balcony heard hard smacks and a young voice call out, "Help me!" Over an hour later, passersby found John Hartman, 15, beaten almost to death near the balcony.

Later that morning, police picked up a drunken Eugene Vent, who used to play on the high school basketball team with Roberts, after a hotel clerk said Vent had waved a gun at him that night. A detective began a long interrogation that included feeding the drowsy 17-year-old facts about the Hartman assault and the names of three men he wanted Vent to confirm had joined him in the attack. Over three interviews that day marked by Vent repeatedly slurring, "I don't remember," and answering leading questions with, "I was drunk," he eventually gave a jumbled confession that named himself, Roberts and two former teammates—Kevin Pease and George Frese—as the assailants. Hartman died the next day; Vent, Roberts, Pease and Frese were charged with murder.

While the four men—three Alaska Natives

and a Native American—were held in segregation together in a Fairbanks jail, they vowed to remain united. "We said we know we're innocent and we're not going to ever say that we're not and take a deal," Roberts tells *Newsweek*. "We're going to fight this to the end."

At their trials, the woman on that balcony said one of the attackers spoke with a distinctive Native accent. A man testified he saw Roberts and the other three attack another man earlier that night—even though he was drunk, high and 450 feet away.

The men—who came to be known as the Fairbanks Four—were convicted of murder in 1999 and sentenced to prison. "I thought it was complete bullshit. I thought it was dirty," says Roberts, still angry over the now-discredited evidence that put him in prison for 18 years. "They fabricated to make it look how they wanted it to look."

The Fairbanks Four became a major cause for many in the state. Don Honea, the ceremonial chief of over 40 villages from interior Alaska, told the *Fairbanks Daily News-Miner* in 2008 that "those boys were railroaded," and added that Natives feel like they never get a fair shot from cops and courts in Alaska, where the Native population has faced a long history of discrimination.

Defense attorneys for the Fairbanks Four filed appeals, but they were all rejected. Then, years later, new evidence surfaced. A star witness recanted and said police coerced him. In 2012, a convicted killer confessed he was there when

BY
JOSH SAUL
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his friend beat Hartman to death. Late last year, a judge heard the new evidence. The four men knew there was a good chance they'd be exonerated, but they also knew the judge might take six months to issue a ruling, so when the state offered a deal to overturn the convictions and instantly free them, they signed. The catch: the Fairbanks Four had to give up their right to sue the state and withdraw their claims of prosecutorial misconduct, both concessions demanded by the state that legal experts call reprehensible.

Roberts had been paroled about six months before that hearing, so the decision to sign was the most difficult of his life, since he was out and able to sue for compensation. "It was an all or nothing deal. We all signed it, or nobody," he says, still upset over the choice forced on him by the state.

Prosecutors fought to keep the Fairbanks Four in prison all the way through that final hearing and repeatedly attacked each bit of exculpatory evidence. They bashed the recanting of their main eyewitness, Arlo Olson, who originally testified that he stepped outside for a cigarette and saw the Fairbanks Four knock down a man, yell, "Give me your fucking money, bitch!" and drive away earlier on the night Hartman was killed.

Olson signed an affidavit in 2014, claiming police coerced him into testifying he saw Roberts, Pease, Frese and Vent assaulting that man, even though he told investigators he didn't recognize the men. State lawyers argued that Olson, who later did time on a domestic violence arrest, was "miserable in jail because he is harassed or assaulted or threatened or intimidated by people who know him as a 'snitch' or 'rat' for his testimony" against the Fairbanks Four, and that his recantation therefore should be discounted.

State lawyers also sought to undermine the confession of William Holmes, a convicted murderer serving two life sentences who came forward to say he was driving when his friends cruised around Fairbanks that night, looking for "drunk Alaska Natives" to attack, but stayed in the car when they beat Hartman. The state argued that Holmes likely made the confession to retaliate against the man he fingered as Hartman's killer.

The day the deal was signed, the Alaska Department of Law put out a statement declaring, "This is not an exoneration. In this settlement, the four defendants agreed they were properly and validly investigated, prosecuted, and convicted."

In his early years behind bars, Roberts passed time losing himself in memories of river trips and that hunt with his dad before his arrest. But at some point he started focusing on how he hoped to see those waters again. "As soon as the river opens up and the ice clears, I'll be

"THEY FABRICATED TO MAKE IT LOOK HOW THEY WANTED IT TO LOOK."

on the river," says Roberts, now working as a maintenance man in Fairbanks. "Get some gas, jump in a boat and drive. There might be a destination somewhere, or we might just go 5 or 10 miles up the river and enjoy life."

Roberts says he tries to avoid anger but is aware of how much was stolen from him. When asked what he missed most while in prison—hunting, basketball—Roberts interrupts, irritated, and says, "I know what I've lost." ■

FREEDOM TRAIN: The Fairbanks Four being arraigned in 1997, from left, Vent, Frese, Roberts and Pease.





PAGE ONE / GUNS

YOU CAN'T RECALL A BULLET

There is almost nothing to stop manufacturers who make defective guns, even if they accidentally kill people

JUDY PRICE had been walking her dog on a ridge above the Rio Grande the night she got shot with her own gun. It was two days before Thanksgiving 2009, and as she and her Samoyed set off through her Albuquerque, New Mexico, neighborhood, she carried her semi-automatic pistol in a holster strapped against her belly. Price, a concealed carry license-holder, had purchased it for protection and toted it on church security patrols too.

When she arrived back home, Price ducked into her bedroom and began to undress. As she was pulling her sweatshirt over her head, it caught on her Velcro holster, tearing it loose, and her gun dropped on the floor. Price saw a flame flicker at the muzzle, and her husband heard the sharp bang of a gunshot. Later, Price marveled at the groove the hot bullet left on her mint-green sweatpants as it traveled up into her stomach, tore through the internal organs along the right side of her body and lodged in her liver, where it rests to this day.

Modern-day guns are not supposed to go off when they fall to the ground, and Price says her Taurus PT 140 pistol, made by one of the world's largest gun manufacturers, was defective. She sued Brazil-based Forjas Taurus, as well as its U.S. subsidiary, in 2010 and settled out of court the following year. "You have a serious problem," Price remembers telling two company representatives. "You need to do a recall and deal with this issue, because the next person could die."

She says one of the reps replied, "Mrs. Price,

Taurus has no intention of doing a recall."

Price wasn't the only person to claim she'd been injured by a defective Taurus gun. The company has settled with other alleged victims and now faces additional individual lawsuits, as well as the pending approval of a class-action settlement. A Taurus spokesman declined to comment.

That "no response" is fitting because gun makers don't have to answer for potentially faulty products sold in the U.S. the way other industries do. Congress has consistently adopted positions championed by the gun lobby and the National Rifle Association (NRA), writing special provisions that effectively exempt firearms from regulation by consumer watchdog agencies. With potentially defective firearms—unlike virtually any other product sold in the United States, from toasters to cars to medical devices—the federal government has no authority to force a recall. No agency is tasked with ensuring that the estimated 300 million guns owned by Americans even function safely. If gun manufacturers choose to recall a firearm, it is entirely at their discretion, and there is not even a mandatory protocol to alert owners.

In mid-December, the Violence Policy Center listed more than 40 safety alerts and recall notices from 13 gun manufacturers, including Winchester Repeating Arms, Smith & Wesson and Sturm, Ruger & Co. Experts can't pinpoint the exact number of deaths and injuries from defective firearms because there is no national tracker for that data.

BY
**CATHERINE
DUNN**
[@catadunn](https://twitter.com/catadunn)
*International
Business Times*



GET THE LEAD OUT:
Price is pro-gun but believes manufacturers need to be forced to take responsibility for defective weapons.

Price endured 12 surgeries over three years following her gut shot, and she can still feel the twinge of medical mesh holding her organs in place. Only now, though, is Taurus taking steps to get its allegedly defective guns out of people's homes, as part of a landmark legal concession. In July, Taurus agreed to a recall framework for nearly 1 million guns to settle a class-action lawsuit filed by Iowa police officer Chris Carter, who alleges that several Taurus pistol models have inherent design flaws that cause them to sometimes fire unintentionally when dropped. The pending agreement covers nine Taurus models, including the PT 140 that Price used to carry. Attorneys for alleged victims say that since 2005 at least 13 people have been injured in similar incidents involving Taurus handguns. One person, an 11-year-old boy, was killed.

The pending settlement awaits a judge's approval, slated for this month. If the court signs off, gun owners can return pistols to Taurus and receive either a cash reimbursement or a new gun that has an improved trigger safety, attorneys say. Taurus still denies that its guns have defects.

Carter's lawsuit prompted one of just two proposed class-action settlements in which a manufacturer has agreed to a recall. In the other, Remington Arms said it would fix more than 7 million guns, following dozens of personal injury

lawsuits since 1990.

In Carter's lawsuit, plaintiff's attorneys commissioned approximately 500 hours of testing, and experts used high-speed cameras to capture the effects of dropping Taurus guns. That footage revealed, that "upon impact the trigger moved towards the back of the trigger guard, as if someone was pulling it," according to David Selby, an attorney for Carter.

A big challenge is convincing gun owners that lawsuits over defects are not "anti-gun." "We say, 'Look, these cases have nothing to do with an individual's right to keep and bear arms,'" says attorney Todd Wheelles, a gun owner and a former agent with the Alabama Bureau of Investigations who represented Price and now represents Carter. "This is a product defect case, *period*. We'd bring this case if it were a blender or any other widget that was injuring or killing people."

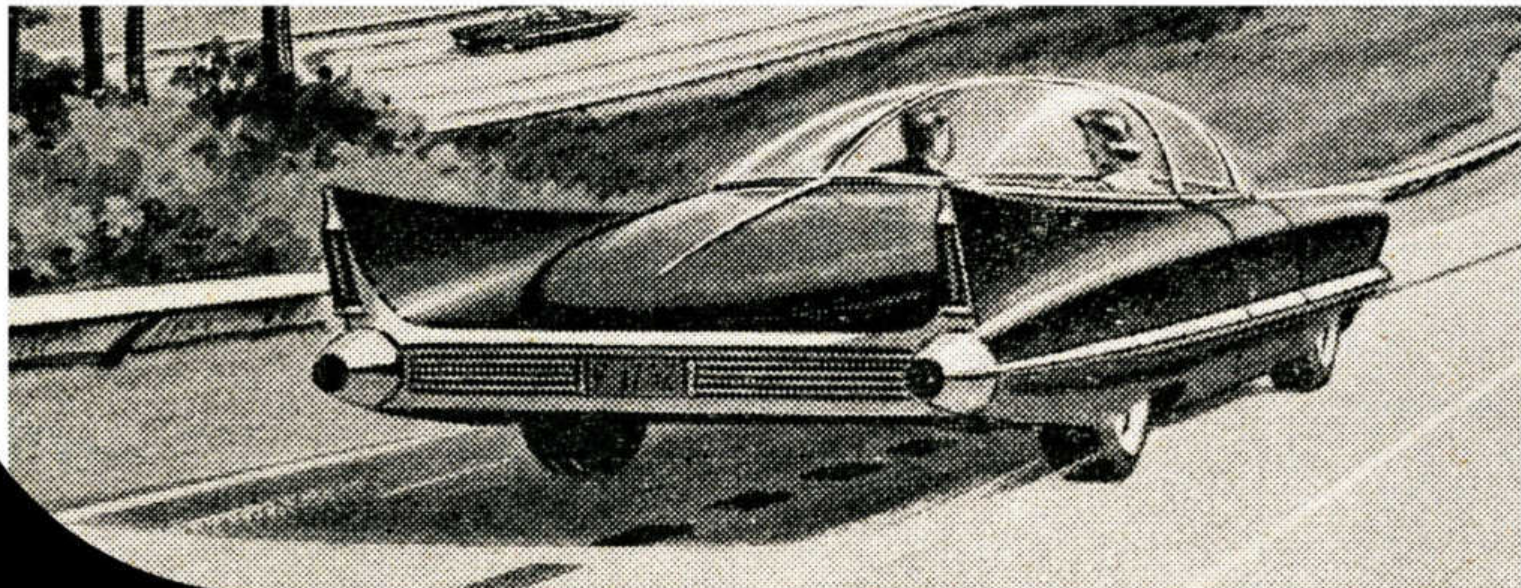
Her accidental shooting turned Price into an unlikely crusader. She's handed out fliers at gun shows depicting the large hole carved into her stomach from surgery, her abdomen bulging in the absence of muscles. She posted online a video

"YOU NEED TO DO A RECALL AND DEAL WITH THIS ISSUE, BECAUSE THE NEXT PERSON COULD DIE."

re-enactment of the incident, complete with graphic images from her painful recovery. The bullet in her liver stopped just shy of her spinal column.

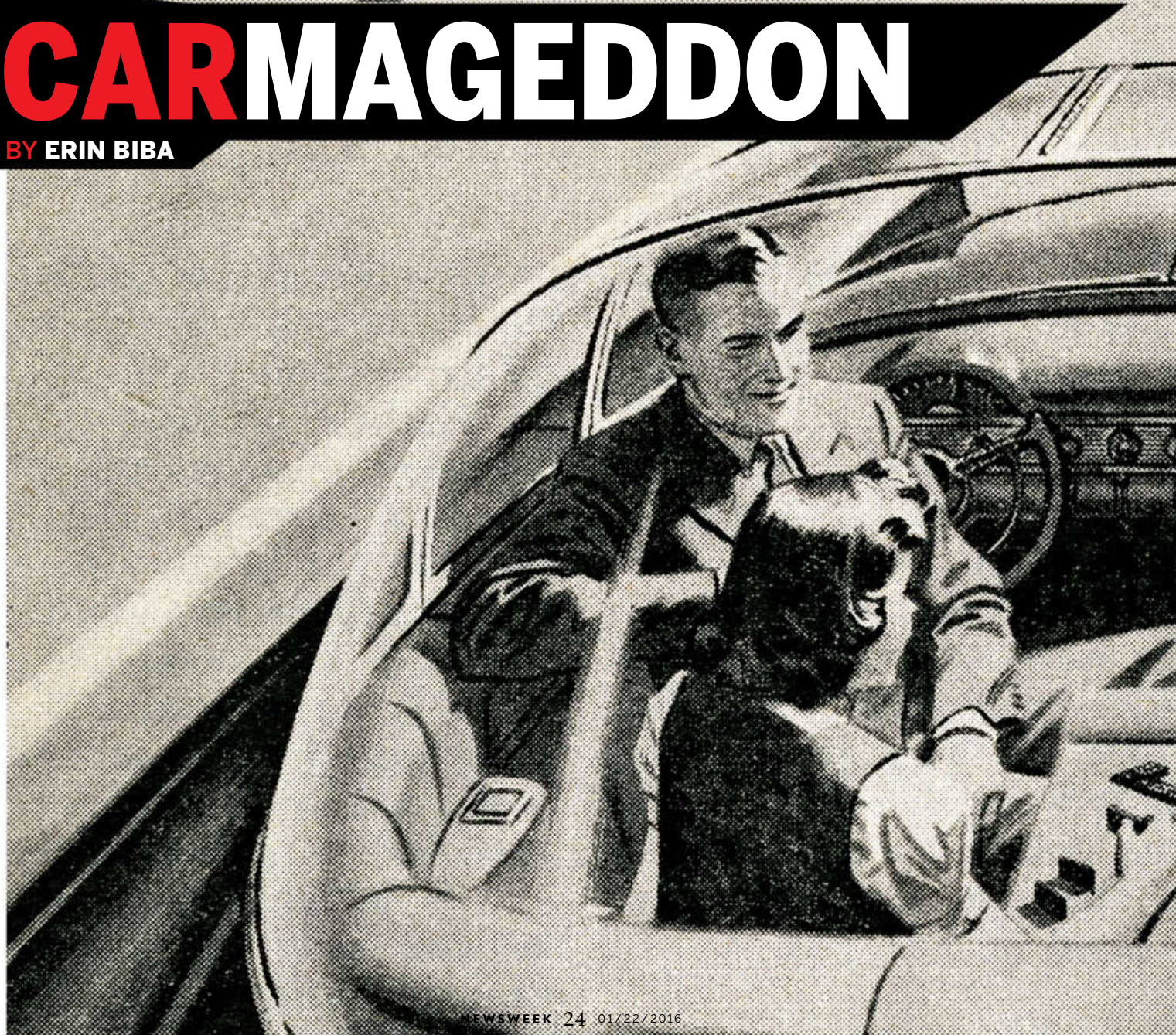
"I felt strongly that the accident should not have happened," Price says. "I just didn't want those things to happen to another family."

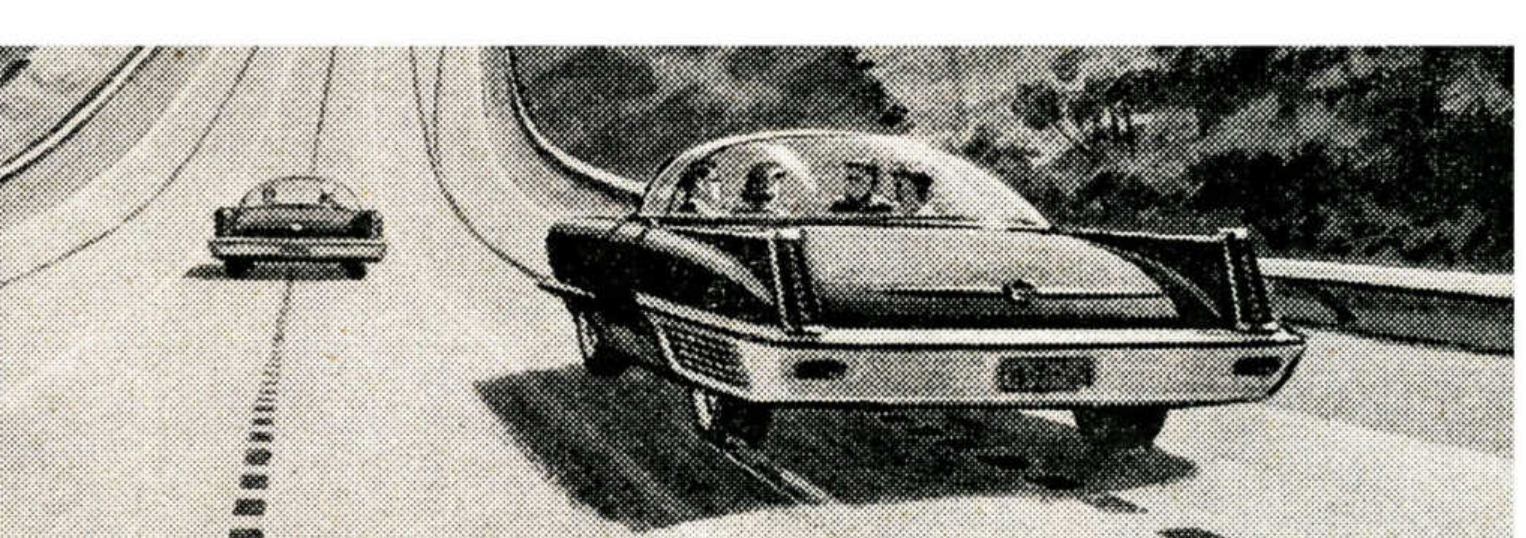
The Prices own about 20 guns, and Price continues to carry a handgun—just not a Taurus. Her anger with the company has not shaken her belief that people should be able to own guns. Carrying one makes her feel "more empowered, that I don't have to be a victim." She doesn't bother to add that when a gun falls on the ground, that shouldn't make you a victim. **PH**



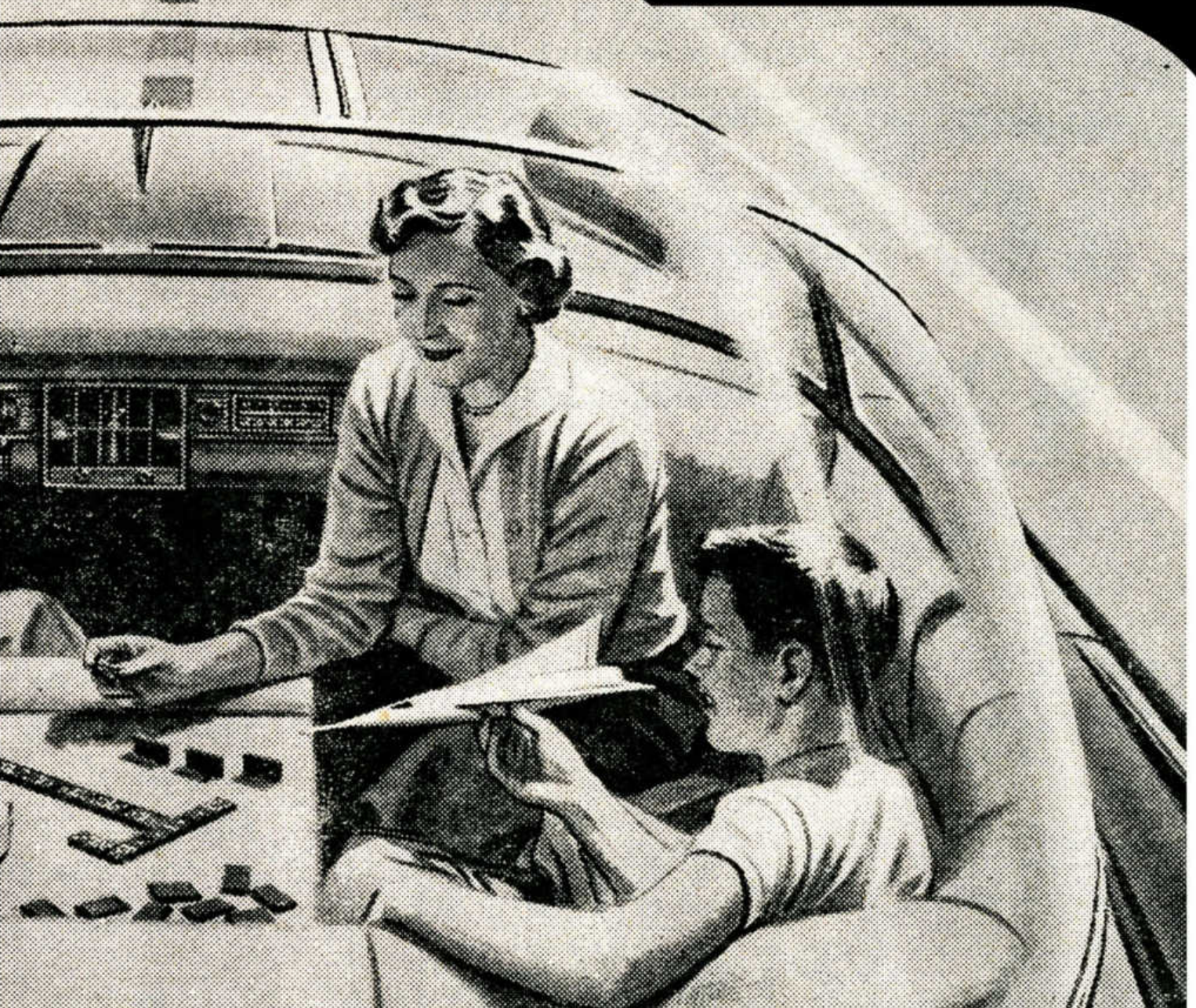
CARMAGEDDON

BY ERIN BIBA





DRIVERLESS CARS ARE ABOUT TO
BLOW UP CITIES, YOUR MORNING COMMUTE AND
HOW WE ALL LIVE. AIN'T THAT A GAS?



FOR THE PAST CENTURY, THE GREATEST TICKET TO FREEDOM FOR EVERY TEENAGER IN THE SUBURBS WAS A DRIVER'S LICENSE.

AFTER A LIFETIME of being chained to your parents—chauffeured around from school to practice to the homes of friends—there is no feeling more adult than the first time you take a car out alone. The next stage of your life has finally arrived, and you are barreling through it at 75 miles per hour.

Car culture was pervasive in the United States for years: The annual number of miles traveled by auto rose decade after decade. Until 2004, that is, when it stopped short. And today, younger Americans are changing their minds about the car. The number of high school seniors with driver's licenses dropped from 85 percent in 1996 to 73 percent in 2010. "Young Americans drive less than older Americans and use public transportation more, and often use multiple modes of travel during a typical day or week," concludes a 2014 U.S. Public Research Interest Group study.

The trend isn't easy to explain. Some have attributed it to the recession following the financial crisis of 2008, but interest in cars continues to wane as the economy rebounds. The study suggests a

GOOGLE BESIDE ME AT THE WHEEL: Self-driving cars—like this Google prototype, on the road in 2014—are supposed to be much safer than cars driven by people because they don't make human errors.



DO IT ON THE ROAD: The Mercedes-Benz F 015 research car takes advantage of the fact that it doesn't need a human driver, with four seats that can rotate to face one another.

number of explanations: Millennials have no memory of consistently low gas prices; they are eager to latch on to technologically enhanced transportation services like Uber; universities have taken steps to significantly reduce the number of cars on campuses; and millennials have a stronger affection for more walkable communities and transportation alternatives than older Americans.

On the horizon, though, is a technological innovation that could reinvent car culture, return people to the road in droves and appeal to the environmentally conscious, tech-loving driver of the future. Except they won't be drivers in the traditional sense: Transportation experts agree that within the next 25 years Americans will start giving up their cars for vehicles that drive themselves.

KILLING THE SOCCER MOM

DRIVERLESS CARS are already finding their way into the mainstream. In 2012, Google started testing its cars on the roads of Silicon Valley and San Francisco. In October 2015, Tesla introduced a software update that allows its Model S to steer, change lanes and park without driver intervention. Google has suggested that its vehicles will become available to the public by 2017, and at the Consumer Electronics Show this year an entire section of the floor is dedicated to "Vehicle Intelligence," featuring technology from companies "that support the future of autonomous/automated driving, including parking assist, collision avoidance, emergency braking and much more." In other words, it's only a matter of time before humans let go of the wheel altogether. Within 100 years, young people won't even remember a world in which a human drove.

When they do finally arrive en masse, self-driving cars will unleash a wave of changes—especially in the United States, where the largest cities were built (or rebuilt) in the golden era of the automobile and lives are built around driving. According to the Texas Transportation Institute, American commuters spent almost 7 billion hours inching their way toward work or home in 2014—and paying for it in more than just lost time and money. Studies have found that people with commutes longer than 40 minutes are unhappier, more stressed and generally experience more worry than those who have only a 10-minute commute. A study in Sweden that tracked more than 2 million married Swedes found that people whose commutes are 45 minutes or longer are 40 percent more likely to get a divorce than those with shorter commutes. A study out of New York University looking at 21,000 U.S. commuters found that there was a



FATALITIES FROM CAR ACCIDENTS COULD FALL BY 90 PERCENT WHEN DRIVERLESS CARS TAKE OVER.

strong correlation between length of commute and hypertension. Another study out of Texas that looked at 4,297 adults found that commuting distance was associated with larger waist circumference and higher blood pressure. And finally, another study out of Sweden that looked at 21,088 Swedes confirmed previous research that commuting contributed to poor sleep quality and everyday stress.

For commuters, driverless cars bring good news: “The driverless car will smooth the traffic flow,” says Egil Juliussen, director of research and principal analyst of automotive technology at IHS, an analytics firm. “The lights will be coordinating [with the cars], so you don’t have all that stop and go.” The amount of time people spend in traffic jams will decrease significantly, and that could reduce the amount of pent-up stress and anger many commuters feel, says Jay Lebow, a psychology professor at Northwestern University’s Family Institute. Additionally, “you can use the time better,” he says. “There is a helpful effect. It might promote more leisure time.”

Of course, not everyone takes their car into work, but when driverless cars start arriving in fleets, subways, light rail and bus lines could end up being replaced (or at least greatly supplemented) by a new mobility industry. It’ll be like Uber, Lyft and the dozens of other on-demand car services that have popped up in the last few years—on steroids. And without drivers. In places like New York City, where

public transportation is completely entrenched, things might not change all that much. But in Los Angeles, where the words *subway* or *bus* are often met with laughter, public transportation could become extinct. Instead, cities like Los Angeles may start running fleets of driverless public transportation cars and vans. It’ll improve the transportation network, and cities will save money by making the switch, says Juliussen, because there won’t be any more need for fixed stations to support light rail or bus routes—just call a driverless vehicle from wherever you are to come get you.

Shared self-driving cars will also gradually replace the personal vehicle. “Cars are idle 95 percent of the time, so they are an ideal candidate for the sharing economy,” says Carlo Ratti, director of MIT’s Senseable City Lab. “It has been estimated that every shared car can remove about 10 to 30 privately owned cars from the street.” In the future, people—and families—may stop owning cars. Instead, they’ll be licensors, owning the right to use a car (or sit in car) for a period of time, shared with others. Even car manufacturers themselves are betting on this future: Lyft announced in early January that General Motors had invested \$500 million in the ride-sharing service company. “We think there’s going to be more change in the world of mobility in the next five years than there has been in the last 50,” said GM President Daniel Ammann.

That means we can probably say goodbye to the “soccer mom.” There will no longer be a need for a member of the family to dedicate days to chauffeuring kids to school, ballet class and soccer practice. A family will be able to give up their now-average 2.5 cars and opt for a share in one driverless car that will take the kids to school in the morning, then swing back around to bring Mom and Dad to work. Families will also have increased mobility, since no one will need a driver’s license (or even the ability to see) to get around. It will be a boon to the elderly and anyone who otherwise wouldn’t be able to drive. And Mom and Dad won’t have to leave the office early to make sure their kids are at hockey practice or guitar lessons.

There will still be people who want to drive, but the driveway tinkerer—who works on rebuilding classic cars and drives them around the neighborhood with the top down—will no longer exist. We might not even have garages or driveways. And some experts expect that human-driven cars might even be banned in some, or all, places. The car enthusiast will have to hitch his Mustang up to a driverless car and take it to a different kind of driving range—where he can tool around on a closed course.

Meanwhile, says Chandra Bhat, director of the Center for Transportation Research at the Univer-

sity of Texas, public transportation will become much more efficient by cutting out low-volume routes. People who live in areas that aren’t as highly populated will rely solely on car services (or their share in a driverless car).

Bhat says that states considering big high-speed rail projects—like California—may rethink their plans. “What does high-speed rail achieve? It allows us to travel without having to drive. But with driverless cars, you’re not driving,” he says. That means you can be completely flexible about when you travel and what you do while on the road. Maybe you drive overnight and sleep the whole way. Or maybe you spend the whole trip working. After all, when your attention no longer needs to be on the road, you can do almost anything inside your car. The automobile of the future might not even have traditional car seats—instead, it might have couches or beds. Perhaps it will even have small kitchens or entertainment centers; cars could easily become mobile living rooms with all of the amenities.

The highways of the future will be filled to the brim with cars traveling 3 to 4 feet apart from one another while going 60 to 70 mph, passengers kicking back and doing whatever it is they want to do. This will significantly increase the capacity of roads, and the

“EVERY SHARED CAR CAN REMOVE ABOUT 10 TO 30 PRIVATELY OWNED CARS FROM THE STREET.”



number of cars that travel on them will skyrocket. Massive intercar communications networks will help them all run efficiently and safely. And that means a huge burden on the world's global positioning system networks—better known as GPS. The U.S. has 24 satellites in the sky that run its GPS systems, which many software manufacturers use in tandem with 24 of Russia's positioning system satellites, called GLONASS. That's fine for now, but in order to manage worldwide fleets of cars that rely on digital maps to find their way around, someone—countries (Europe, China and maybe India) or car manufacturers or fleet owners—will have to launch new satellites. According to Julius-sen, the number of satellites in low-Earth orbit “goes to 120 by the early- to mid-2020s or so.”

What that means is we won't just have an electrical grid anymore. We'll have a new type of closed system—a car grid—that features a worldwide network of moving parts controlling all of the Earth's cars. Our cars will all talk to the grid, and through the grid, they will also talk to one another.

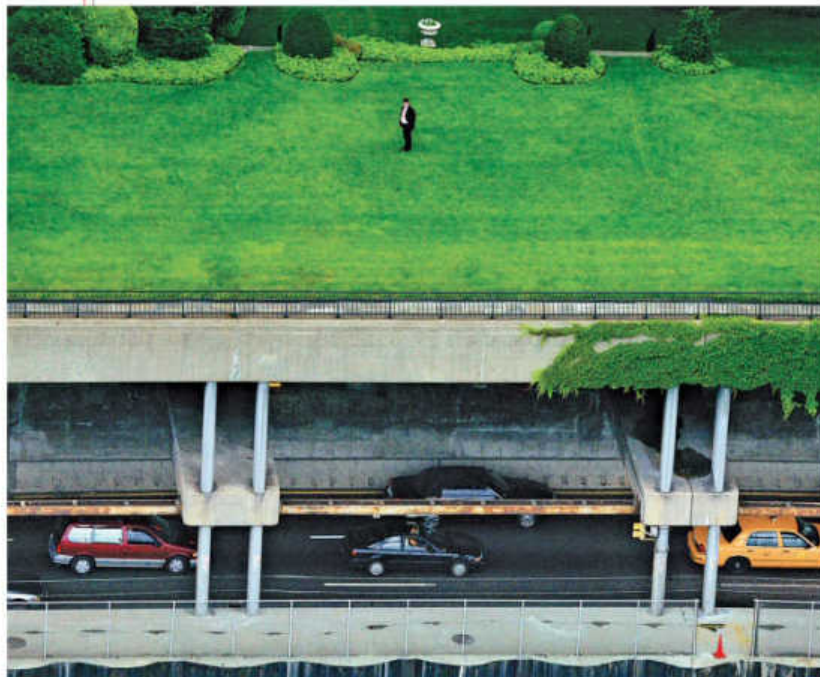
LIKE PRESCHOOL PARKING LOTS

HUMANS ARE flocking to cities now more than ever. According to the World Health Organization, urban population worldwide was 54 percent of the human race in 2014, up from 34 percent in 1960. But will everyone want to live in the city when their commute becomes so much easier? There's a chance the driverless car revolution will propel a suburban exodus bigger than was seen post-World War II.

On the other hand, with a massive fleet of on-demand, self-driving cars, there will be no more worry about the downtown traffic on Friday nights, where to park when you arrive, surge pricing when all the Uber drivers are busy or squeezing into overcrowded subway cars at peak hours. Still, it's possible that “location, location, location” won't be able to sell cramped condos anymore.

People could instead just live any old place. And when it no longer matters where people live, it also won't really matter where they work. Maybe everybody will still go to work downtown, and the street in front of office buildings will look like preschool parking lots at the end of the day with driverless cars lined up waiting to take workers home. But that seems unlikely, given that the idea of the office has been changing. We're trending toward a world of telecommuters, and the number of freelancers is on the rise. According to a recent Gallup poll, 37 percent of the U.S. workforce telecommuted in 2015, up from just 9 percent in 1995. If contract workers

PRIVATE PUBLIC TRANSPORT: The transportation system of Masdar City in Abu Dhabi, United Arab Emirates, is testing “Personal Rapid Transport” cars instead of traditional passenger trains or buses.



RE-GREENING: Self-driving cars can be in constant use, picking up one passenger after the next. That means parking lots and garages can be turned into more human-friendly environments.

are the new normal, and the location of the office no longer matters, then the office itself might disappear completely. “Will we even have designated workplaces?” Bhat asks. “The technology is so ubiquitous for communication the whole concept of the home and workplace could vanish.”

If more people move away from the cities and suburban sprawl increases, the environment will take a hit (see: L.A.). But if people use significantly fewer cars and all those cars are electric, which seems likely (industry leaders Google and Tesla build only electric cars), then it won't.

On the other hand, getting human hands off the steering wheel might make cities much more green, and livable. For example, all the space currently taken up by parking is going to be put to a more environmentally friendly new use. “I think we can just let our creativity run wild,” says Ratti, who imagines there will be many more green spaces in cities. Transforming parking garages will be more difficult, Ratti says, because their floors are angled—not really ideal for most of the things humans like to do in open spaces, like play soccer or host flea markets. However, that might change as well: “In a current design project in Singapore, we are already designing a very large parking structure by thinking about how it could be converted,” he says. “You want to have horizontal floors instead of sloping ones and a slightly higher than normal floor-to-floor height to allow for other uses.”

According to Erick Guerra, a city planner at the University of Pennsylvania School of Design, over the next few decades, the smarter urban planners and civil

engineers—the ones who are already anticipating the arrival of the self-driving car—will start to put streets on “road diets.” In the suburbs, that means highways won’t be widened and fewer new ones will be built. In the cities, some lanes will be repurposed for biking, and roads will get more pedestrian-friendly features like wider sidewalks and easier crossings.

An invisible but potentially huge change, Ratti says, is the convergence of cities with the digital world. Our cars and our cities will talk to each other, share information and track data. It’s already beginning to happen: The Center for Urban Science and Progress at New York University is working with New York City to harness the massive amounts of data generated there on a daily basis from things like Metrocard swipes,



closed-circuit camera footage, tweets about traffic and smart energy meters. This information is already making cities more efficient. For example, CUSP is helping the city analyze overcrowding in subways, as a result it has begun to increase service on at least one line and unveiled new digital apps to help commuters manage the system.

Once cars on the streets are linked into a single city-wide network that shares all data, those efficiencies will be able to happen on the fly, making them even more powerful. Cars will be able to identify problem intersections that cause congestion and avoid them or even spot and report small crimes happening on the street. Reporting everything that happens around every car in a city will make big data and its benefits even bigger. It’ll save time, money and lives.

NOTHING TO GET MADD ABOUT

IT’S A MOMENT we all know too well. Traffic slows and you inch your way along the highway wondering why, out of nowhere, you’ve lost all forward

FAMILY’S BEST FRIEND: Self-driving cars (like this Kia prototype, right) will do it all; log long-distance highway miles, navigate city streets and park themselves while they wait for their next human pickup.

momentum. And then you see it, up ahead, flashing lights. A drunk driver has wrapped his car around a tree, a line of tailgaters has caused a pileup, or someone has fallen asleep behind the wheel and drifted into oncoming traffic. Every year in the U.S., more than 35,000 people die in car accidents. It’s a reality that we all accept every time we climb behind the wheel: Driving is dangerous.

But once humans aren’t allowed behind the wheel, they’ll lose the power to cause accidents. Human error is the main reason for most car crashes. In July 2008, the U.S. Department of Transportation released a report to Congress called the National Motor Vehicle Crash Causation Survey. After studying 6,950 crashes over a period of three years they determined that 93 percent of all the accidents were caused by human error: Among other things, people were distracted, they were traveling too fast, they misjudged the other driver or their own abilities, they overcompensated after an error, they panicked or, in 3 percent of cases, they were asleep. Removing humans from the equation will eliminate every one of those problems. According to a 2015 study by McKinsey & Company, fatalities from car accidents could fall by as much as 90 percent, saving \$190 billion, when driverless cars take over.

It’s a huge public health benefit that will ripple through the health care, law enforcement and insurance sectors. A recent study by the insurance, tax and auditing firm KPMG found that if accidents drop by 80 to 90 percent, the personal auto insurance sector could also fall by as much as 60 percent due to lost premiums. Some of that could be made up by insuring manufacturers, who will likely take on the burden of responsibility for car-related accidents. After all, it’s their software that will control how cars drive, so it will be on them to prevent fender benders.

The elimination of impaired drivers means there will also be less need for highway patrol—after all, driverless cars don’t speed, have heart attacks behind the wheel or drive drunk. In fact, the demographic of the highway will change. The long-haul truck driver, for example, whose living is made traveling back and forth across the country will no longer be needed. Delivery services like FedEx or UPS won’t need to employ nearly as many people. Trucks can easily be loaded by machines, then transported without a driver to a central location. Once your package arrives at a local warehouse you can send your car to pick it up. There’s little to no human intervention needed. That means a loss of jobs for the nearly 3.5 million professional truck drivers around the country.



WHEN YOUR ATTENTION NO LONGER NEEDS TO BE ON THE ROAD, YOU CAN DO ALMOST ANYTHING INSIDE YOUR CAR.

It's unclear how the self-driving car revolution will impact the job market overall. On the one hand, it seems like there will be huge cuts to both the public and private transport sectors. New York City's Metropolitan Transit Authority employs more than 65,000 people, and according to the U.S. Bureau of Labor Statistics there were about 665,000 jobs for bus drivers in the U.S. in 2014. In the future, whether public transportation sees increased or decreased use, it will certainly become driverless. And according to the U.S. Bureau of Labor Statistics, there were more than 230,000 taxi and chauffeur jobs in the U.S. in 2014—all of which stand little chance of making it through the self-driving car revolution. Other sectors will grow: Juliussen says driverless cars will need to be replaced every three years due to their increased use, so manufacturers may stand to benefit from an increase in sales.

CALIFORNIA SCHEMING

NONE OF this is really all that new. In 1918, just a few years after the automobile began mass manufacturing in the U.S., *Scientific American* wrote: "The car of the future will have no such thing as a 'driver's seat.'... Driving will be done from a small control board,

which can be held in the lap... A small finger lever, not a wheel, will guide the car." It sounds almost like they are describing the driverless car coming our way soon.

And, like today, people back then thought the car of the future would be the world's savior. "City planners looked at the car as the solver of urban planning problems—most of which were related to density," says Guerra. In some ways, those predictions were accurate: Cities today have higher populations, but inside them people aren't packed so tightly. And we certainly don't live with the health risks posed by the mess that horse-based transportation leaves behind.

But the car wasn't the answer to all of humanity's problems. We replaced human congestion with traffic jams, air pollution and acid rain. We fight over drilling rights, and the economies of entire nations hang on the price of a barrel of oil. The driverless car will bring with it a slew of benefits and drawbacks that we can do our best to predict—but there's no way we can dream up everything that's to come. There are two things, though, that we can say with confidence: Driverless cars will radically change the way we live, and 100 years from now no one will hear the words *Los Angeles* and automatically think "carmageddon." **N**

**YOU CAN'T
GET THERE
FROM
HERE...**





OR ANYWHERE

AN ENERGETIC YOUNG MAYOR WANTS
TO SAVE LOS ANGELES FROM
ITSELF WHILE A WORLD SNARLED IN
TRAFFIC PRAYS FOR HIM

BY ALEXANDER NAZARYAN
PHOTOGRAPHS BY TARA PIXLEY



“Nobody walks in L.A.”

—MISSING PERSONS, “WALKING IN L.A.,” 1982

THERE HAS NEVER been a more quintessentially Los Angeles family than the Farriers, who in the 1960s made the freeways their home. They had owned a house in Tujunga, but it became too expensive to maintain, so they sold it. They were left with a camper and the asphalt ribbons that weave through the canyons and valleys of the unruly city. The freeway was both their means and their end.

In the morning, they drove from the downtown lot where they parked each night north on the Hollywood Freeway, to where Steve Farrier worked in Burbank. Then Marilee Farrier drove on the Golden State and San Bernardino freeways to El Monte, on the east side of Los Angeles County, where she deposited the couple’s baby with her mother. She then got back onto the San Bernardino and drove to West Covina for her job at a department store. In the afternoon, she used the San Bernardino to return to El Monte for her baby. Following that, the Golden State and the San Bernardino whisked her back to Burbank. Reunited, the three Farriers cruised on the Hollywood Freeway back downtown.

They drove this 128-mile route each day, but being freeway nomads did not bother the Farriers all that much. “We’ve really begun to feel that the freeways, particularly the Hollywood Freeway, which is a beautiful road, belong to us,” Steve told *Cry California* magazine, where the story of his remarkable family first appeared in the summer of 1966. His chief complaint about living in the camper was the frequency with which the toilet demanded emptying. “Frankly, we use the toilet as little as possible,” he confessed.

The Farriers were, it turned out, an invention of *Cry*

**GARCETTI
IS THE
CHE GUEVARA
OF SOUTHERN
CALIFORNIA
INFRASTRUC-
TURE.**

California. Like every successful hoax, this one was a close relative of reality. Said one observer, “I suspect that people like the Farriers are driving about Los Angeles today.”

If the Farrier story appeared today, their living out of a car would not seem remarkable, at least not to anyone who has seen subdivisions across California emptied by foreclosure. More implausible, from a contemporary perspective, is how little time they spent sitting in traffic. This, more than anything else, would rouse suspicions in all those for whom





**SWEET JAM
RELIEF:**
Garcetti
wants to
make L.A. the
first “post-
modern city,”
but he’ll prob-
ably settle for
cutting local
commute
times in half.

the Sepulveda Pass at rush hour is more punishing than anything Dante imagined. Traffic doesn’t get much worse, at least not in the developed world. A 2008 study by the Rand Corp. struck a lonely note of solace: Things are not as bad in Los Angeles as they are in Jakarta, Lagos or Bangkok. Yet.

This is the city Eric Garcetti inherited, but it is not the city he wants to leave behind. Now in his third year as mayor, the 44-year-old Democrat wants Los Angeles to be “the first postmodern city,” as he tells me, speaking in his art-filled office one morning in October. Throughout the past year, he has made a series of

proposals that would fundamentally alter the city by deposing the automobile, which has reigned over Los Angeles for a half-century like a cocksure Third World despot. Garcetti thinks he can tame the four-wheeled beast through a series of measures that will get Angelenos walking, cycling and using public transportation. Call him the Che Guevara of Southern California infrastructure. If his revolt succeeds, it could spread across the nation: pedestrian plazas in Houston, bike lanes in Atlanta, a reclaimed riverfront in St. Louis.

Cities around the country are watching Garcetti, since traffic is getting worse everywhere. According to Inrix, a

company devoted to the study of traffic, the worst commutes in the United States are in the Washington, D.C., area, where lobbyists and the politicians who love them spend 82 hours per year in logjams Congress would be proud of. The Los Angeles area is second, with 80 hours of freeway hell, but the metro regions of San Francisco (78 hours) and New York (74 hours) are close behind. Another study, by the American Highway Users Alliance, found that the severest bottleneck in the country was a stretch of Interstate 90 through Chicago. Many of the worst bottlenecks are in reliably constipated Los Angeles, but the top 10 is rounded out by charming little Austin, Texas, with San Francisco, Boston, Seattle and Miami also faring poorly.

There are more pressing problems in the world than your morning commute, but traffic woes can't be dismissed as #FirstWorldProblems. The \$160 billion we lose in what Inrix calls "delay and fuel cost" related to traffic is more than the gross domestic product of Hungary. As for the 6.9 billion hours we collectively spend sending death stares into the immobile Prius in front of us, that is "more than the time it would take to drive to Pluto and back, if there was a road." It is fair to say that any infrastructure problem that requires an analogy to outer space to describe its full scope is not going to be an especially easy one to solve.

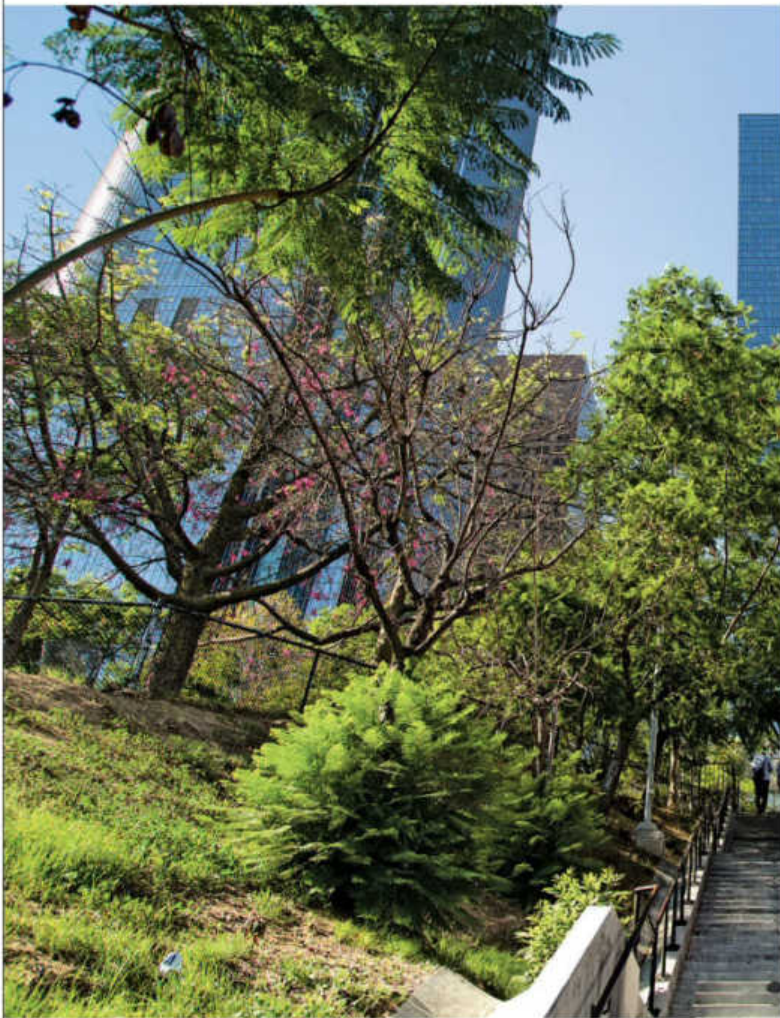
**"We are prepared
to endure
considerable public
outcry in order to
pry John Q. Public
out of his car."**

—CALTRANS OFFICIAL,
QUOTED IN JOAN DIDION'S
"BUREAUCRATS," 1976

THE CENTERPIECE of Garcetti's vision is Mobility Plan 2035, released last summer, its name a subtle allusion to the immobility that now grips every corner of this huge and restless city. The new mobility would come at the expense of the car. There is also Vision Zero, an initiative to eliminate traffic fatalities modeled on Stockholm's program of the same name. Los Angeles also has Great Streets and Complete Streets and People St, all different plans to fight the same four-wheeled enemy. There will be a subway to the sea, finally. There are now bus shelters with smartphone chargers. There are pedestrian plazas in downtown, which is now called DTLA and increasingly looks like

the downtown of a real city. The Los Angeles River does not yet look like a river, but if Garcetti has his way it will, and people will jog and bike along its banks, just as they do along the Hudson.

As if all this were not enough, Garcetti has launched a campaign for Los Angeles to host the 2024 Summer Olympics. His infrastructure plan could benefit that bid, while the bid could generate funds for the infrastructure plan. Of course, both could come to naught, embarrassing Garcetti and convincing Angelenos that theirs is a fundamentally intractable city.



By 2024, Garcetti will no longer be the mayor of Los Angeles, though where exactly he will be by then is a matter of frequent speculation. Many think he yearns for a stint in Sacramento, as California's governor, or in Washington, as one of its two senators. Very few mayors of Los Angeles have ever achieved such prominent office, largely because it's hard enough to keep a city of 500 square miles and 4 million people from devolving into chaos. Trying to make that city friendly to bicyclists

and pedestrians might be politically unwise, if not outright insane. But if Garcetti can do that, he can credibly promise to fight greater evils: overcrowded prisons, global warming, pension mandates, the Kardashians.

Not everyone, though, is sold on Garcetti's vision. His detractors live in wealthy enclaves like Beverly Hills, where the high hedge rules and pedestrians arouse alarm; others are in the immigrant communities of East Los Angeles, where people are worried about schools and jobs, not curbside

"TRANSIT SYSTEMS WILL BE SO BACKED UP THAT RIDERS WILL WONDER NOT JUST WHEN THEY WILL GET TO WORK BUT IF THEY WILL GET THERE AT ALL."

To more philosophical detractors, Garcetti's distaste for freeways is an abomination, a fundamental misunderstanding of the soul of Los Angeles. The car is the celebration of American individualism, and the freeway—*free* way—is where that national spirit roams.

Our classics are *On the Road* and *Easy Rider*, not *On the Light Rail* and *Contented Commuter*.

Columnist Joe Mathews recently argued in the *San Francisco Chronicle* that Los Angeles had "downsized its dreams" by deciding to build subway lines and bike lanes, which would only fragment a city the freeways had unified. Mathews doesn't quite call Garcetti an elitist interloper who doesn't understand the city he has been elected to govern. But he comes pretty close.

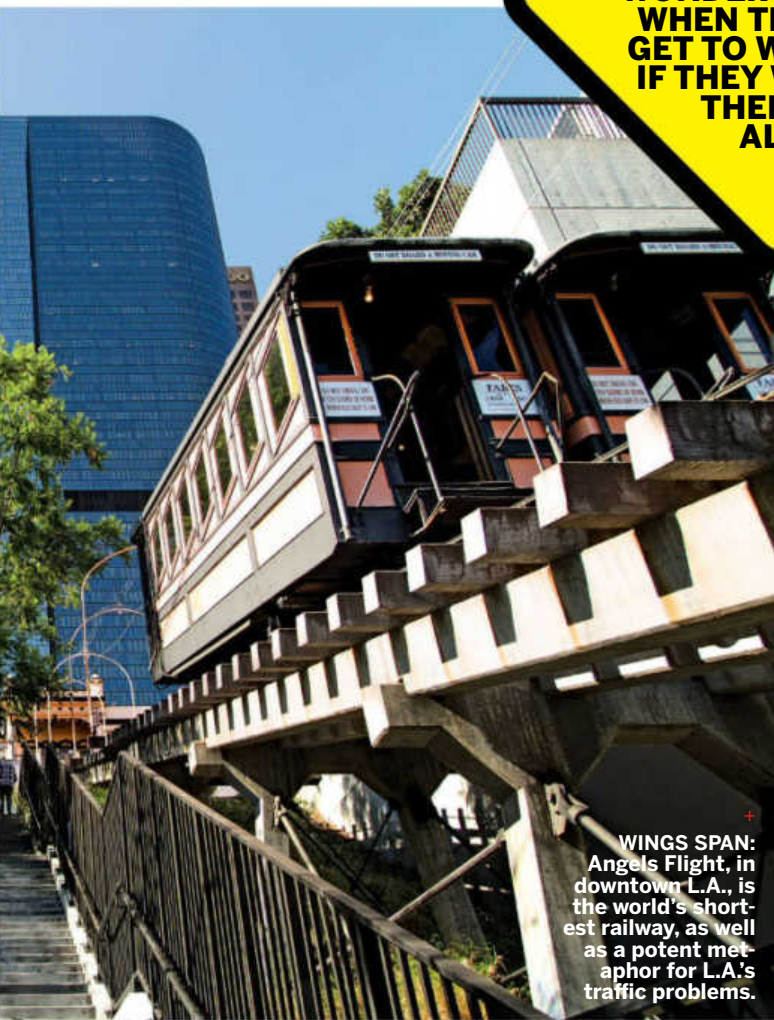
"Both sides," says Kevin Roderick of the news site LA Observed, "see this as a fight over the soul of the future of Los Angeles."

"Who needs a car in L.A.? We have the best public transportation system in the world."

—WHO FRAMED ROGER RABBIT, 1988

IT IS FITTING that the shortest railway in the world is in Los Angeles and that it no longer functions, a handsome but useless monument to a bygone city. Opened in 1901, the Angels Flight funicular was really more of an elevator on an incline than a proper railroad. Nevertheless, it signaled the big-city aspirations of Los Angeles, whose population had just broken 100,000. Angels Flight connected the genteel residential neighborhood of Bunker Hill to the commercial district of downtown. In the 1960s, urban redevelopment leveled Bunker Hill, and in 1969 Angels Flight was dismantled and put into storage. It reopened in 1996, closed in 2001 after a fatal accident, came back to life in 2010, suffered another accident in 2013 and stopped running again. Today, Angels Flight is fixed on that incline, ready to go but going nowhere.

Angels Flight is a reminder that there was a city here before the freeways. Angelenos of a certain caste like to remind outsiders that the Red Car trolley system once featured 25 percent more track mileage than today's New York City subway. But the Red Car ceased to run in 1961, after years of declining service.



WINGS SPAN: Angels Flight, in downtown L.A., is the world's shortest railway, as well as a potent metaphor for L.A.'s traffic problems.

plantings and dedicated bike lanes. "You cannot have a world-class city that's falling apart," says Laura Lake of Fix the City, a group that has been fighting Garcetti in court, so far without much success. "And we're falling apart." She points to potholes that proliferate on city roads like acne on a teenager's face. The buses do not run on time. Water mains break, turning streets into lagoons. The homeless wander the very streets Garcetti likes to celebrate as havens of the New Urbanism.

There is, today, a Metro system of buses, light rail and subway, but it is a system of last resort. Ridership has declined now that immigrants without documentation are allowed to apply for a California driver's license.

The most ambitious of Garcetti's plans is a significant expansion of the Metro rail network. The push to expand subway service started under his predecessor, Antonio Villaraigosa, who in 2008 managed to pass a half-cent sales tax that will raise \$35 billion for public transportation. Garcetti has doubled down: 11 subway, rail or bus projects are in either the planning or building stages. The most ambitious of these are the extension of the Expo Line light rail, which would finally connect downtown to Santa Monica and the Pacific Ocean, and the westward extension of the Purple Line subway along Wilshire Boulevard, considered by some to be the city's Main Street. But there will also be forays into the foothills of the San Gabriel Mountains, to the northeast, and a rail connection to Los Angeles International Airport.

The knock on Los Angeles has always been that it's a sprawling mess, but that's far closer to myth than to reality: Los Angeles is the second densest metropolitan region in the United States, after New York City and its direct environs. New York, though, works along a traditional urban model: Commuters take trains and subways into the incredibly packed nucleus that is Manhattan from the less crowded outer boroughs and suburbs. Los Angeles, conversely, is "both dense and polycentric," in the words of the 2008 Rand study on Los Angeles traffic. That's a challenge, it explains, because "the fact that population and jobs are spread out across more centers increases the difficulty of attracting sufficient ridership on any given link."

It is an article of faith among today's young urbanists that public transit will save the day, that cities with subways are superior to cities without them. But Frances Anderton, who hosts a design and architecture show on the public radio station KCRW, offers a note of caution. She went to school in London before moving to Los Angeles and still remembers that city's Tube system with a measure of dread. "Much as I am excited about the expansion of public transit, I am not romantic about its ceaseless joys," she says with customary British dryness. Anderton commutes to work on a bicycle and supports Garcetti's plans, but she believes that even if Metro service were dramatically expanded and improved, "there would still be enormous congestion." Too many people simply have too far to travel each day to too many different places, which is why drivers alone in their cars account for about 70 percent of the commuters in Los Angeles.

Joel Kotkin, the rare urbanist who does not think suburbia is hell with a backyard, recently wrote that

the Greater Los Angeles area "should not prioritize our transit dollars" in trying to imitate New York or San Francisco, as any such effort was bound to fail. Both of those cities have central districts where commerce has been happening for centuries. Not so for bigger, younger Los Angeles. Only 3 percent of the area's workers, he pointed out, work downtown, which makes it not much of a downtown at all. Commercial activity is spread over a vast area that no transit system could possibly service. That view is supported, in part, by Paul Sorensen, one of the authors of the Rand study, who says new transit lines could never adequately compensate for the region's complex tangle of travel patterns.

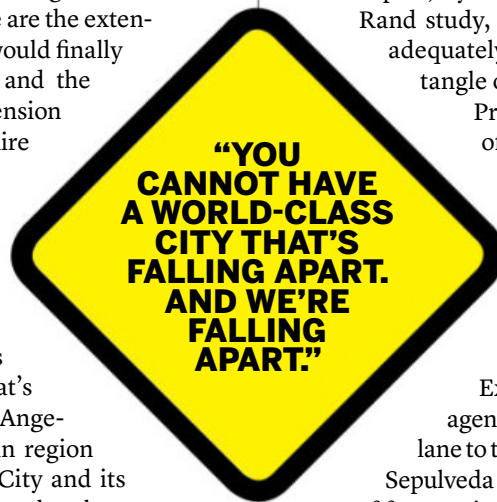
Previous attempts to coax Angelenos out of their cars have generally failed. Today, though, demography is on the side of the New Urbanists. A Bloomberg projection has Los Angeles becoming the densest city in the United States by 2025. The freeways, which are choking today, will buckle under the weight of all those added millions.

Expanding them will not help. A variety of agencies just spent \$1.1 billion to add an extra lane to the northbound Interstate 405 through the Sepulveda Pass, one of the most congested stretches of freeway in the United States. The road closures that this five-year project involved were given apocalyptic names: Carmageddon, Jamzilla, the Rapture. About the kindest thing I could find about the improvement was from local public radio affiliate KPCC, which reported that traffic has gotten only "a little slower."

Brian Taylor, an urbanist at the University of California, Los Angeles, has offered an ingenious argument: Traffic is a sign of urban health, one we should embrace as we do a newborn's regular excretions. Cities like New York and Los Angeles are inundated with cars because everyone in the tri-state area wants to try a Cronut, because no Orange County weekend is fully lived without a trip to the consumer nirvana of the Beverly Center. "Cities exist because they promote social interactions and economic transactions," Taylor wrote in a recent paper. "Traffic congestion occurs where lots of people pursue these ends simultaneously in limited spaces. Culturally and economically vibrant cities have the worst congestion problems, while declining and depressed cities don't have much traffic." Just take Peoria, Illinois. (His example, not mine.)

Or not. A recent survey of Angelenos found that traffic is by far their biggest concern, with public safety a distant second (55 percent to 35 percent). So either these poor folks don't know how good they have it or Taylor's argument is better suited to the groves of academe than to the right lane of the 405.

There is always monorail. No, seriously. In 1963, the Alweg Monorail Company offered to finance the



construction of a monorail system throughout the Greater Los Angeles area. The monorail would have cost \$105 million, but the residents of Los Angeles refused. Some point to that as a watershed disaster, like the Red Sox trading Babe Ruth to the Yankees for \$100,000. But Boston has transcended its curse. Los Angeles is still waiting.

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**“People have been
walking in L.A.
since before
Columbus discovered
America.”**

—JOE LINTON, STREETSBLOG
L.A. EDITOR, 2015

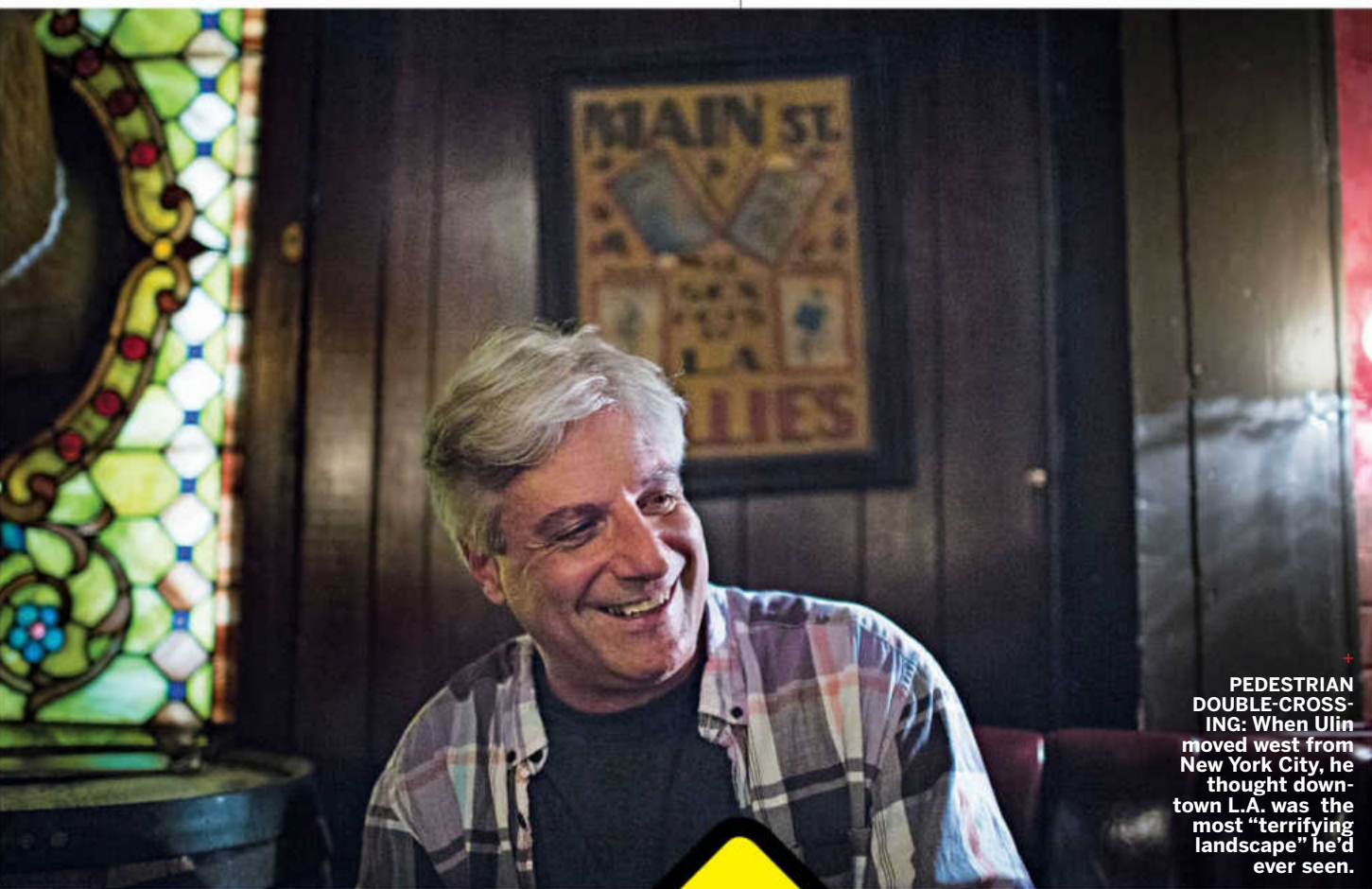
THE FAMOUS SUNLIGHT of Los Angeles is a crucial ally of Garcetti's. It is not like the sunlight anywhere else. It is not the cruel, scorching sun of Sacramento, nor the precious sun that sometimes punctures the coastal fog

above San Francisco. It is so much more glorious than the sunlight of Chicago and New York that, when you first feel it on your face, you wonder if you have ever felt true sunlight before. What a shame, then, that so many Angelenos experience the beneficent Southern California climate only in driveways and parking lots.

If Angelenos did decide to walk more, they'd quickly find a city not especially suited to the enterprise, with wide boulevards that seem as perilous to cross on foot as freeways, and freeways over which “pedways” stretch like bridges to nowhere. The palm trees that Los Angeles is famous for provide scant shade along its thoroughfares and do not trap carbon emissions well, leading the City Council in 2006—then led by Garcetti—to put a moratorium on palm planting. About 40 percent of the city's sidewalks are cracked and, what's more, can be expensive to traverse: The Los Angeles Police Department aggressively enforces a state injunction against late crossings by ticketing people who start crossing at an intersection after the walk signal has begun to flash, sometimes levying fines of up to \$200. It can seem like every force in Los Angeles is aligned against the pedestrian—other than that splendid and generous sun.

The company Walk Score gives Los Angeles a 64 out of 100 on its walkability index, two points





**PEDESTRIAN
DOUBLE-CROSS-
ING:** When Ulin
moved west from
New York City, he
thought down-
town L.A. was the
most “terrifying
landscape” he’d
ever seen.

**THE
AUTOMOBILE
HAS REIGNED
OVER L.A. FOR A
HALF-CENTURY
LIKE A COCKSURE
THIRD WORLD
DESPOT.**

behind Baltimore. Carey Waggoner, a fourth-generation Angeleno who grew up in Beverly Hills, says the only time she remembers walking in her neighborhood was in the wake of the 1994 Northridge earthquake, which isn't exactly what proponents of pedestrianism have in mind. New arrivals quickly adapt. Barry Harbaugh is a book editor who recently moved from New York City. “Way less destination walking going on during the week here,” he reports, remembering the days when he would stroll through Central Park on the way to a work meeting.

Waggoner, who lives in New York, says she will “without a doubt” return to Los Angeles, evincing a civic pride many of the city’s current residents do not feel. A recent *Los Angeles Times* article on low voter turnout speculated that Angelenos feel a sense of “detachment” and “community isolation.” That reinforces the old quip (attributed variously to Aldous Huxley, Dorothy Parker and H.L. Mencken) that Los Angeles is “72 suburbs in search of a city.” The famous insult is 16 short of the current number of municipalities in Los Angeles County, but it gets at the heart of

the matter: It is hard to have civic pride if your knowledge of a city consists merely of traveling back and forth on its freeways. The dream of mobility has atomized the city, so that Angelenos know neither their city nor themselves.

Los Angeles Times architecture critic Christopher Hawthorne calls what’s happening today the Third Los Angeles, following the oil boomtown of the 19th century and the suburban idyll of the 20th. As he told *LA Observed*, “Having run out of room to sprawl, virgin land to conquer, the city is doubling back on itself, constructing more infill development and experimenting with denser housing and vertical architecture. We are finally building a comprehensive and public mass-transit system to match the privately run one of the First L.A.”

This Third Los Angeles is probably most evident downtown, on Broadway, where I met David Ulin, a native New Yorker who until recently was the chief book critic of the *Los Angeles Times*. Last year, Ulin published *Sidewalking*, a paean to walking in Los Angeles, which he has been doing for two decades, determined to prove to himself and others that they live in a real

city. Downtown, he says, was “the most terrifying landscape I have seen” when he arrived there in 1991. Today, the only terrifying thing is the real estate prices, both commercial and residential, which have risen and will keep rising. Half the people there look like recent transplants from Brooklyn or Austin. Accordingly, hip hotels like the Ace and the Standard have followed, occupying historic buildings along the thoroughfare. The Grand Central Market is packed, as are celebrated new restaurants like Church & State and Bäco Mercat.

City planners love buzzwords that make the business of pouring concrete and chipping asphalt a sexy enterprise, but one that is genuinely germane to Garcetti’s outlook is “Latino Urbanism,” a term that describes the fluid interplay between the private and the public in places like Mexico City, a kind of thriving chaos. The concept is appropriate in a city that is about half Hispanic. Some, though, note the irony of Latino Urbanism pushing out long-standing businesses that catered to Spanish-speaking immigrants, replacing them with bars and boutiques for gringos in oh-so-ironic “Defend Los Angeles” T-shirts.

Garcetti tells me he is practicing “urban acupuncture,” applying his vision of the city where it is most needed. When he was a city councilman in the youthful Silver Lake district, he successfully advocated for the conversion of a short stretch of road into a pedestrian plaza. It was the first such project in Los Angeles, which is accustomed to giving drivers more pavement, not taking pavement away from them. The *Los Angeles Times* deemed the 11,000-square-foot plaza “unusual,” as if it were the obsidian slab that greets puzzled primates at the opening of 2001: *A Space Odyssey*. Garcetti remembers the outcry over the plaza, principally from local business owners. “For a few people there, you would’ve thought we were telling them they had to ride to work on a horse,” he says. As a councilman, he also supported the creation of a “Hollywood Central Park,” parkland covering a below-street-grade section of the 101 freeway that is currently a gash through the city.

As mayor, Garcetti has added three pedestrian plazas in areas that aren’t on the hipster radar: in middle-class, gentrifying North Hollywood; the vastly Hispanic neighbor of Pacoima in the San Fernando Valley; and traditionally black Leimert Park. His Great Streets initiative has tried to make wide, shadeless thoroughfares like Van Nuys Boulevard places where you might walk or even stop and sit to appreciate your surroundings. As he carves bike lanes out of surface streets and builds new subway lines, Garcetti acknowledges that this is a “painful moment” for Angelenos, particularly those who “worship” the car and have seen their deity maligned. “Most of us are polytheistic,” Garcetti says, convinced that his city’s fealty to the freeway is not nearly as strong as some think. That’s a stark contrast to former Mayor Tom

Bradley’s assertion that people came to Los Angeles “looking for a place where they can be free.” The means of that freedom was the freeway, a notion that today seems both ridiculous and naive.

Instead of trying to hang on to this outdated version of Los Angeles, Garcetti tells me he is doing “advance work for urbanists everywhere.” The power structure of Los Angeles doesn’t make that work easy. For one, the city’s “weak mayor” system means he is routinely curbed by the City Council, though it has been generally receptive to Mobility Plan 2035 and other initiatives. More vexing is the fact that Los Angeles and Los Angeles County are hardly one and the same. Whereas New York’s Mayor Michael Bloomberg could exercise his New Urbanist vision over all of the city’s five boroughs, Garcetti is only the mayor of the city of Los Angeles, which is but one of those 88 municipalities in the county that most of us call “El Ay.” He controls only 500 square miles in a city-as-county nine times that size. His fortunes at least partly depend on Santa Monica, which may want bike share, and Pomona, which may want extra lanes of freeway.

And not-in-my-backyard sentiment can be especially strong in Los Angeles, since many people have very nice backyards. Some at Beverly Hills High School, for example, tried to stop the Metro from excavating a subway tunnel underneath the school, claiming the school could fall victim to a methane gas explosion or even a terror attack. In Westwood, near the UCLA campus, some residents fought against bike lanes. Garcetti won both of those fights, but each skirmish takes time and money. It can sometimes seem like the city’s Westside—wealthier, whiter, more tied to the film industry—is opposed to Garcetti’s infrastructure plans, while the Eastside—denser, hipper, full of immigrants—is for them. But that isn’t exactly the case. Gil Cedillo, a city councilman who voted against Mobility 2035 and represents many poor and working-class Angelenos, has branded Garcetti’s vision for Los Angeles “elitist.”

“The road to hell
is paved with good
intentions—and with
bicycle lanes on each
side of the pavement.”

—JOHN MARSHALL, LETTER TO THE
LOS ANGELES TIMES, 2015

CYCLING MAY BE abhorrent to some in Los Angeles, but it certainly isn’t new. In 1900, the developer

Horace Dobbins opened the Cycleway, a bicycle path between Pasadena and Los Angeles, made of pine slats and elevated as high as 50 feet above the ground. Only a little more than 1 mile of the 9-mile Cycleway was ever completed, and the rise of the car relegated the quirky project to oblivion. But it is a reminder of what may have been, and what could be again.

Garcetti's predecessor, Villaraigosa, was a champion of bicycling. In 2010, he was riding his bike after a workout down Venice Boulevard in the busy Mid-City neighborhood when a cabbie cut him off. The mayor stopped short and went flying over his handlebars, breaking his elbow. Angelenos took notice. If the city's chief executive wasn't safe on a bike, then who was?

The cabbie surely made an innocent error, though in Los Angeles one can't be sure. Even given the widespread antipathy to bicyclists, the antipathy to bicyclists in Los Angeles is especially strong. Last year, lifelong Angeleno Jackie Burke told NPR how she felt about the rising popularity of bikes: "It's very frustrating, to the point where I want to just run them off the road. And I've actually kind of done one of those drive-really-close-to-them kind of things just to scare them, to try to intimidate them to kind of get out of my way."

Some wonder if it's worth it, given that only 1 percent of Angelenos bike to work. Even with the addition of hundreds of miles of bike lanes under Mobility Plan 2035, how much can that share of commuters ever increase? Bruce Feldman, a longtime resident of Santa Monica, recently reminded Garcetti that Los Angeles "is not Stockholm" and took issue with the mayor's "road diets": the bike lanes, pedestrian-friendly planters and other alterations that all take space away from cars on surface streets. "Your road diet would make congestion in our expansive region much worse than it already is," Feldman argued. "If you squeeze an ever-increasing number of cars into fewer lanes, what other outcome can you expect?"

Nobody is a bigger booster of biking in Los Angeles than Joe Linton, who runs Streetsblog Los Angeles, a website devoted to promoting bicycling and walking. He is at once hopeful and frustrated, encouraged by Garcetti's vision but worried that "L.A. hasn't been nimble enough." Linton says the city has been installing bike lanes (46 miles under Garcetti) in neighborhoods where it knows there will be little resistance, on streets where major sacrifices (i.e., car lanes) won't be required—in essence, padding the numbers without improving the cycling experience. In New York, conversely, Mayor Bloomberg forced residents to get acclimated to dedicated bike lanes by putting them on some of Manhattan's busiest thoroughfares, including Broadway. But any comparison to New York clearly bothers Linton. "It's not gonna look like New York tomorrow," he says. "It's not gonna look like New York in 20 years."

On the other hand, Los Angeles has many broad and

underused streets, as well as wide sidewalks that get little foot traffic. Dedicated bike lanes would be easier to build here than in dense Manhattan, where every inch of pavement is a precious resource fought over by drivers, pedestrians and cyclists. "I'm convinced L.A. has the potential to be the best city to ride a bike in America," wrote journalist Peter Flax. Many more bike lanes are planned, and downtown Los Angeles should have a bike share in place in the first half of 2016. In 2010, Los Angeles didn't even make the list of *Bicycling* magazine's top 50 bike-friendly cities in the United States. Four years later, Los Angeles was 28th, leaving Omaha (47th) in the dust.

—
**"This is certainly
 a noble stream to be
 found running in a
 semi-arid country."**

—WILLIAM MULHOLLAND,
 CHIEF ENGINEER OF THE LOS ANGELES
 AQUEDUCT, 1904

ONE OF THE more telling views of the city is from the Avenue 26 Bridge, near the intersection of the 110 and 5 freeways. On Google Maps, the many ramps look like a nest of pale-yellow snakes. The view in real life reveals no hidden beauties. Standing on the bridge, you are offered none of the classic Los Angeles scenes: no Hollywood sign, no Sunset Boulevard. Pacific

**BANKS SHOT:
 Garcetti
 wants Gehry
 to help
 restore the
 51-mile-long
 L.A. River.**

+



Palisades might as well be in another country.

Instead, what you see is traffic on the 110 creeping glacially, a multicolored ice floe from which the occasional shard disassociates, floating toward an exit ramp. Next to the freeway, sharply sloping walls of concrete cradle where they meet a flimsy stream of water. This is the Arroyo Seco, one of the tributaries of the Los Angeles River, which is trapped in concrete for about 43 of its 51 miles as it passes through the county. The river is so unglamorous and neglected, there must be many who drive along its banks each day but do not know that it exists.

The Los Angeles River may be an urban tragedy, but the final act remains unwritten. If its entire length were opened up to foot and bike traffic, as some desperately want, the river would connect disparate communities in Los Angeles like no other project since the freeway. Open a river and close a wound, one that is as much psychic as it is physical.

For this was once a beautiful place. In 1769, Spanish settlers arrived in what is today known as the Arroyo Seco Confluence, where the Arroyo Seco flows into the Los Angeles River. In his writing, Father Juan Crespi described embankments “very well lined with large trees, sycamores, willows, cottonwoods, and very large live oaks.” But the river also had a tendency to flood. After a particularly brutal deluge in 1938, the Army Corps of Engineers was called in to build what is essentially a protective sleeve of concrete around the river. It may be ugly, but it works—the river does not flood anymore.

A few stretches of the old beauty do remain, enticing reminders of what the river once was. One of these is the Glendale Narrows, where the concrete slopes lead to a riverbank that is as organic as hipster coffee. Willows hang over water that rushes over rocks. For a moment, as you move through the thicket of trees toward the river, through the dappled light, your hear only the rush of water. You can forget that you’re in Los Angeles; you can forget that you’re in the 21st century.

Recently, the Los Angeles River has come to figure into Garcetti’s infrastructure plans. In fact, it may be the most potent symbol for those plans, even though its waters will never bear commuter ferries or tugboats. To restore the river would be to restore some earlier version of Los Angeles, one more attuned to the land on which the city sits and the people who live in that city.

There have been plans to fix the river before, but Garcetti has secured a promise of \$1.3 billion from the Army Corps of Engineers to undo its 80-year-old “improvement” by partly removing the concrete straitjacket that has strangled much of the river. The plan still needs congressional approval, but designs

**ONLY ONE
THING CAN STOP
TRAFFIC:
LOWERING
DEMAND FOR
DRIVING.**

suggest that the Los Angeles River may, one day, look like a natural waterway, at least in places.

But as with pretty much all of Garcetti’s infrastructure plans, things quickly became much more complex. Shortly after the Army Corps funding seemed to move forward, the *Los Angeles Times* revealed that the mayor had quietly enlisted Frank Gehry to draw up a plan for the entire 51-mile river.

The backlash to the Gehry announcement was swift and surprising. “Last time there was a single idea for the L.A. River, it involved 3 million barrels of concrete. To us, it’s the epitome of wrong-ended planning. It’s not coming from the bottom up. It’s coming from the top down,” said Lewis MacAdams, who founded Friends of the Los Angeles River three decades ago and has done more than anyone to attenuate the frequency with which the river is likened to a gutter. He also suggested that Gehry’s participation would imperil the federal funding by declaring the Army Corps persona non grata, now that a starchitect was involved. Alissa Walker, a Los Angeles-based urbanist blogger, argued in Gizmodo that Gehry’s work “rarely provides true public space and doesn’t show many gestures to the natural environment.” An architecture critic for the *Guardian* warned that Gehry needed to “suppress his expensively eye-catching clichés and channel the spirit of his early work.”

Others worried that the Los Angeles River was being remade not as a public good but as a private asset to be enjoyed only by the wealthy whites who would inevitably move to condominiums along its banks. You could feel, in the Los Angeles press, crosscurrents of anxiety and hope, blowing as ferociously as the Santa Ana winds. Early in his mayoralty, Garcetti was criticized by some for an aversion to risk. Now he was promising to give Los Angeles a river where, for decades, there has only been a rivulet. To clean up a river is a matter of custodianship; to make a river flow out of concrete might be closer to magic.

—
**“A city built for
driving better be good
for driving.”**

—TIM SULLIVAN, *WAYS TO
THE WEST*, 2015

THE MOST CONVINCING argument for how to save Los Angeles comes from the 2008 Rand study. More than 500 pages in length, it has sections with click-bait titles like “Inadequate Explanations for the Severity of



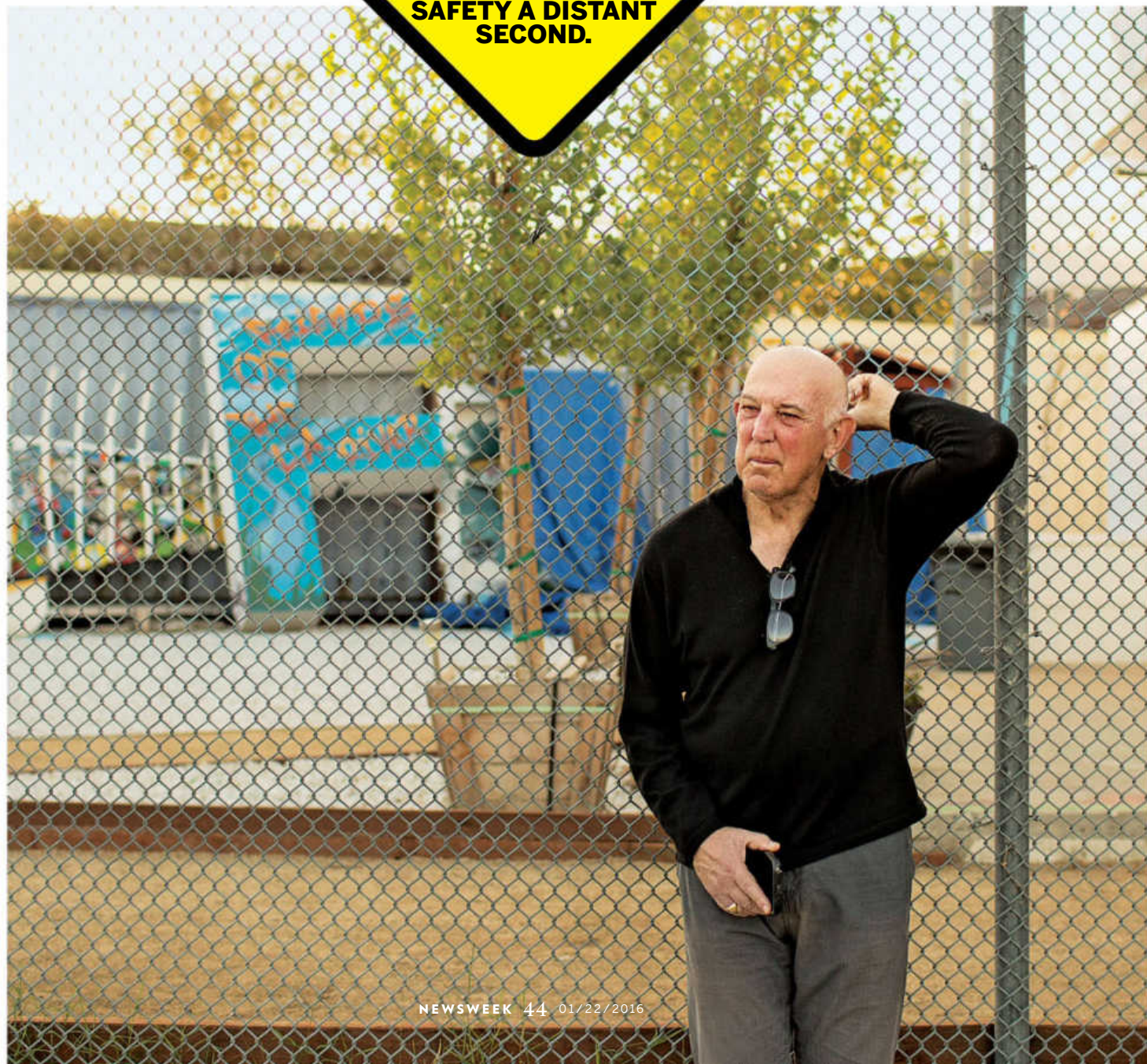
Congestion in Los Angeles” and “Congestion Is a Non-linear Phenomenon.” The authors of the report are dedicated urbanists who would recommend unicycles if they thought that would save the city.

Though the study predates Garcetti, it convincingly argues that bike lanes and sidewalks aren’t the powerful decongestants the city needs. The authors are pessimistic about public transportation too. The Rand folks say only one thing can stop traffic: lowering demand for driving. And it’s pretty basic economics that raising the price of something decreases demand for that service or product. That’s exactly what the Rand study recommends, urging Los Angeles to charge drivers for using certain routes during rush hour and

parking in desirable areas during business hours. Sorensen, one of the authors, says tolls from congestion pricing could go to improving public transit, thus offering more options for those who can’t pay the new driving “tax.”

London is the biggest city in the world to try congestion pricing, instituting the practice in 2003. It did seem to lessen traffic for a few years, but gains stagnated in 2007, and London remains one of the most congested cities in Europe. Mayor Bloomberg sought to institute congestion pricing in Manhattan, but he was foiled by the outer boroughs, many of whose working-class residents rely on cars. As the Rand study acknowledges, making people pay to drive may just mean that the poor will drive less.

**TRAFFIC IS BY
FAR THE BIGGEST
CONCERN FOR
ANGELENOS,
WITH PUBLIC
SAFETY A DISTANT
SECOND.**



“No plan to institute congestion pricing within city limits,” Los Angeles Department of Transportation spokesman Bruce Gillman tells me, though he points out that Los Angeles has a “congestion parking” system downtown. Caltrans, the state authority that controls the city’s freeways, has dynamic tolling on the Harbor Freeway, but the *Los Angeles Times* reported that “so many drivers now steer into the Harbor Freeway’s northbound toll lanes to escape morning traffic jams that the paid route is slowing down too.” As for strict congestion pricing on county freeways, Caltrans spokesman Micole Alfaro says his agency “has no plans.”

“You can’t do congestion pricing across the entire Southland,” says Anderton, the KCRW host, using the place-name for the Greater Los Angeles region. “I’d

imagine congestion pricing can only work when drivers have alternative modes of transit. Most here don’t.”

—
“I cannot find it
in me to complain
about the freeways
of Los Angeles;
they work
uncommonly well.”


—REYNER BANHAM, LOS ANGELES:
*THE ARCHITECTURE OF FOUR
ECOLOGIES*, 1971

THINGS ON THE FREEWAYS are only getting worse. A report by the federal Department of Transportation has predicted that soon “transit systems will be so backed up” around the nation “that riders will wonder not just when they will get to work, but if they will get there at all.” If that comes to pass, Los Angeles may long for the days when it was being favorably compared to Jakarta.

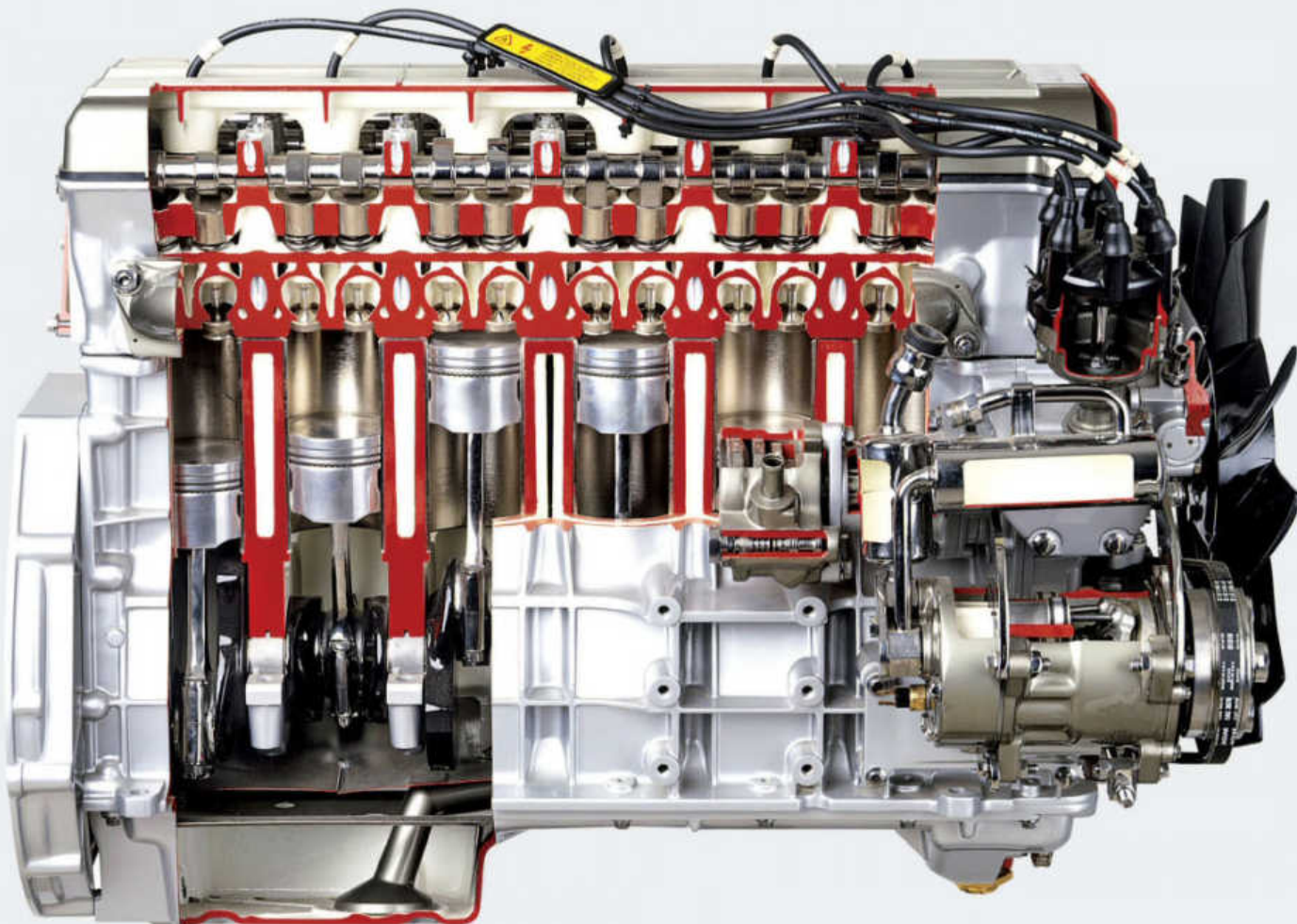
The traffic in Los Angeles has become so bad, it’s like the Eiffel Tower that writer Guy de Maupassant deemed “an unavoidable and horrible nightmare,” one that eventually drove him out of Paris. But while the tower looms vertically, the freeway pervades L.A. horizontally, an anxiety that snakes through every part of the city. “People think about it all the time,” *Sidewalking* author Ulin says.

Last April, a mountain lion became the newest celebrity in Los Angeles. He did so by crossing the 101 freeway in search of a new home, having been pushed out of his birthplace in the Santa Monica Mountains. The National Park Service named him P-32, and as he crossed highways, pushing north and east, he became a folk hero, a symbol of nature’s trace in a city that is often regarded as unreal and hostile to all living things, including humans.

P-32 crossed the 23, the 118, the 126. But then he got to the 5, near Castaic Lake. It was August 10, early in the morning. Trying to get across the highway, P-32 was hit and killed. He was 21 months old. Hundreds of people die on the freeways of Los Angeles each year, but the death of a mountain lion touched a new and painful nerve. And though no one will stop driving because of P-32’s demise, the accident did remind people that driving has costs that we should not have to pay. There have been renewed efforts to build a wildlife overpass for the 101, which would have made a crossing like P-32’s less perilous. Animals, it turns out, have as hard a time getting around Los Angeles as humans do. ■



ALL WET? McAdams, who has spent over 30 years trying to save the L.A. River, calls Garcetti’s plan for it “the epitome of wrong-ended planning.”



+
SOUPEd UP: Engine systems that deactivate cylinders to conserve energy have been around since the '70s. But Tula's dynamic skip-fire is the first to constantly rotate which cylinders are firing.



NEW WORLD



INNOVATION

AUTOS

WILDLIFE

GENES

ENVIRONMENT

SPACE

GOOD SCIENCE


FIRING ON SOME CYLINDERS

Inexpensive engine software could improve gas mileage in your old car

THE MASSIVE 6.2-LITER V-8 engine in the white 2010 GMC Yukon Denali does exactly what you'd expect when you step on the gas: It moves. It does the same when you're climbing up or speeding down a hill, or when you cruise along miles of beach at 50 miles per hour. All this would be unremarkable if it weren't for the complicated dance happening under the hood.

Tula, a Silicon Valley startup, modified the truck so that its engine can now choose which of its cylinders fire and when, conserving energy with no noticeable loss of power—a technology the company calls “dynamic skip-fire.” The Denali uses every bit of its 403-horsepower engine to get up to 60 mph, but once it's there, the car needs a lot less to keep moving—something closer to 30 HP. Imagine making an omelet, says James Zizelman, a managing director at Delphi, a company that helped outfit the Denali. You probably don't need more than three eggs, right? But, says Zizelman, “in most cars, you're pouring out parts of eight different eggs to make a three-egg omelet.” In other words, there's a lot going to waste. “This

technology lets the car use just what it needs,” he says, by constantly changing which cylinders are firing. The result, Tula says, is a 15 to 20 percent fuel gain without any major engine changes.

In August 2012, the U.S. government mandated that the average consumer vehicle get 54.5 miles per gallon by 2025. Right now, most new cars and trucks in the U.S. average just 24.3 miles per gallon. While electric cars can help that average, the combustion engine isn't going away any time in the next decade. Car companies will probably get to 54.5 by making a lot of tweaks to their fleets, like adding more turbochargers (which increase efficiency by forcing extra air into the engine) and designing engines that stop at red lights. A software solution, like Tula's, would be attractive because it's cheap—estimated to be just \$350 for the improvement to that Denali—and means car companies could continue to use their current engine designs on future car models. Delphi and Tula say they are in discussions with several major auto companies in the hopes that dynamic skip-fire will be in a production car by 2020. 

BY
**GRANT
BURNINGHAM**
 @granteb

DAVE RUDKIN/DORLING KINDERSLEY/SCIENCE SOURCE

DISRUPTIVE

A PREDICTABLE KILLER APP

Hedge funds and the CIA are building AI that will see the future

EVERY TIME A new year rolls in, lots of people make predictions. Most will either be obvious (Apple will put out some new products) or wrong (still waiting for Apple to buy Tesla).

Well, here's a prediction about predictions: Technologists will soon build prediction machines that will have a massive impact on society. Unless those machines already secretly exist. And they might—if you had one, would you tell anybody?

There is no more powerful technology that could be invented than a prediction machine. Being able to act ahead of what's going to happen is the ultimate competitive advantage. Whoever has the best predictions wins.

Of course, we already have stuff like predictive analytics that can crunch a bunch of data and anticipate that if you build a Red Lobster in a certain ZIP code, it's likely to do well. But we're talking about a system that could take in the grand global scheme of events and make some startlingly accurate forecasts about economic shifts, consumer behavior, wars, migrations or leadership changes. If you had a reliable political prediction machine, you would know whether to ease up on the anxiety or start packing mukluks and poutine recipes for your escape to Saskatoon.

U.S. intelligence agencies are at work on prediction machines. So are giant hedge funds. The biggest hedge fund, Bridgewater Associates, employs renowned computer scientist David Ferrucci for that reason. Ferrucci used to be at

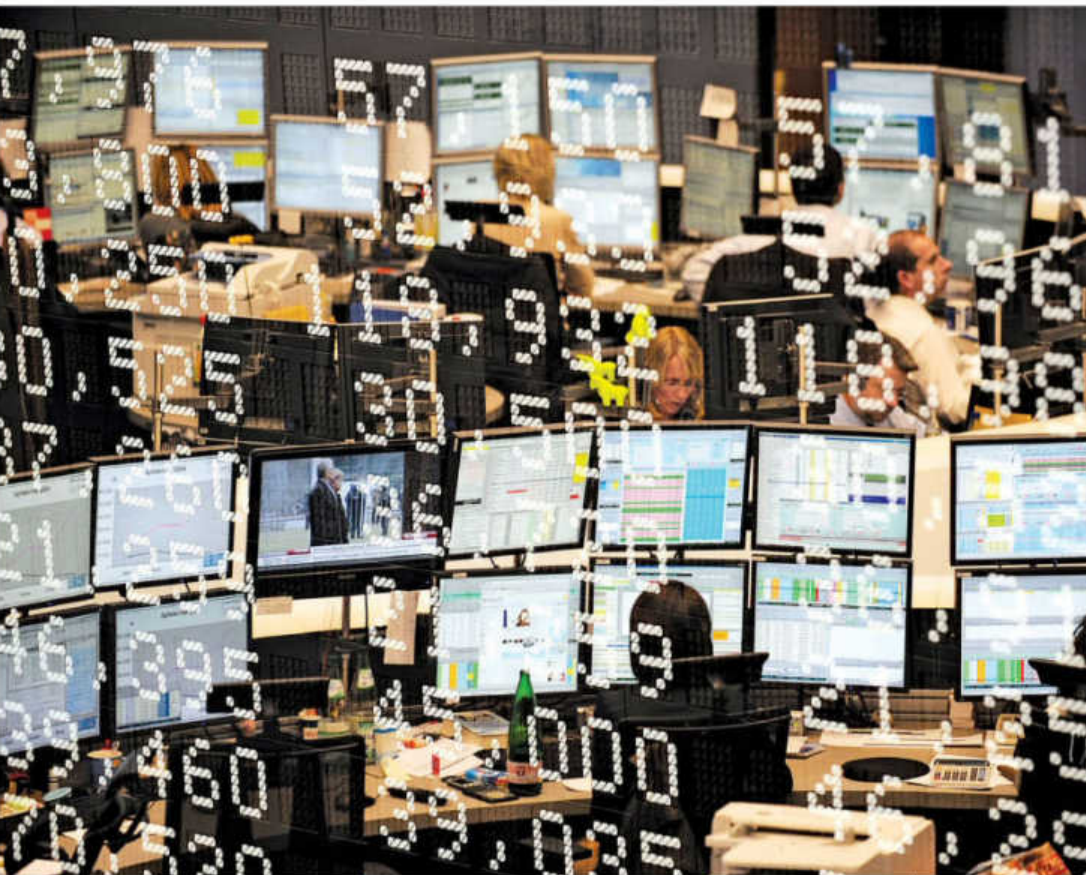
IBM, where he guided the development of the Watson computer that beat human champions on *Jeopardy!* in 2011. Meanwhile, IBM and other companies continue such work. Vault, a startup out of Israel (which is crawling with predictive intelligence specialists), claims to be able to predict how much money a movie will make just by feeding the script into its computer.

The point isn't to make technology that can predict events with 100 percent accuracy. That's never going to happen. All a system has to do is make predictions that are more accurate more of the time than anyone else's predictions.

That trait, in fact, is what separates talented people from the rest of us. Gary Klein, who has long studied human predictive abilities, calls this "anticipatory thinking." Experienced car drivers are better than new drivers because they've learned to predict what's likely to happen in different situations. The best CEOs have a higher batting average in predicting what will happen if they make certain decisions. Wayne Gretzky, a relative wisp of a hockey player, famously said that the key to his success was skating to where the puck was going to be.

That's what a prediction machine could do for an organization like Bridgewater—or the CIA: give it the kind of anticipatory thinking that would bring a distinct advantage over any competitor or combatant. CIA Deputy Director Andrew Hallman called it "anticipatory intelligence" in an interview with military site Defense One. The publication concluded:

BY
KEVIN MANEY
@kmaney



**LEARNING
SWERVE:** Com-
puters are being
taught to mimic
the traits of
human “super-
forecasters.”

“Intelligence, in this context, becomes almost a superpower.”

This kind of predicting would require sucking information from all kinds of sources—books, social media, government reports, scientific research, TV shows, sensors—and using it to construct different scenarios, rate their probabilities of happening and continually test those probabilities against new information. It’s machine learning taken to a level of can’t-touch-this complexity.

In a twist, one of the keys to getting there is helping computers learn how humans make predictions. The CIA funds an ongoing project called Good Judgment, run by Philip Tetlock, a professor at Wharton School of Business. Good Judgment regularly holds forecasting tournaments where people from all walks of life try to answer questions like, “Will Iran honor the nuclear treaty?” Past games helped identify people Tetlock calls “superforecasters,” who are better at this than most. Then Tetlock’s team, as he puts it, “tested the bejesus out of those poor people,” and found that the traits of a great forecaster are actually discernible and teachable.

If a trait is teachable, it can be coded. The algorithm might be beyond current mathematics, but you can see where this is heading. If the CIA can code computers to “think” like superforecasters, then computers can become superforecasters.

And because computers can ingest far more data than any human ever could and work on it tirelessly, computers will at some point out-predict the superforecasters.

At IBM Research, a lab project led by Dharmendra Modha has for years been

**“IF YOU GET
EVEN HALFWAY,
YOU CHANGE
THE WORLD.”**

studying the human brain to try to make computers think and predict more like people. “The disparity between modern computer architectures and the brain is so large that,” Modha once told me, “if you

get even halfway, you change the world.”

Bridgewater has long refused to talk about Ferrucci’s work there. But the hedge fund’s Zen-like chief, Ray Dalio, has always run the firm by constructing grand models of global economic activity and making big-picture predictions. That he would seek a predictive machine makes sense. He compared his quest to building GPS for investing. “We believe the same things happen over and over again because of logical cause-effect relationships,” he said in a statement last year. “By writing one’s principles down and then computerizing them, one can have the computer make high-quality decisions in much the same way a GPS can be an effective guide.”

As with GPS, in the near future prediction machines will act as partners with humans—providing guidance and reasoning that humans might miss, making human forecasters better than they ever could be on their own. Tetlock says Ferrucci once told him he thought it would take until 2040 for computers to out-predict human superforecasters. But it could certainly be sooner—machine intelligence these days is advancing faster than most technologists had anticipated.

And what happens to us when machines out-predict humans? Too damn hard to predict. ■

THE ICEBERG HUNTERS

Intrepid mariners are selling thousands-year-old ice to water bottlers and makers of high-end vodka

ICEBERGS have many ways to kill a man. They can suddenly roll over, bust apart without warning and hide, invisible in the dark, and then sink unsinkable ships. They're volatile, dangerous and often larger than anything man has built. But they apparently make great vodka.

I think about the *Titanic* as I sip a thimble of Iceberg brand vodka, poured from a bottle with a blue-and-white rendering of its namesake on the label. Vodka is about 40 percent alcohol and 60 percent water, so over half the bottle in front of me is water plucked from an iceberg. Water that fell as snow tens of thousands of years ago—long before the Industrial Revolution and long before the industrial pollution that now swirls in the air nearly everywhere. I'm not a vodka person, but this one seems smoother than most. I'm not sure if that assessment is coming from my palate or from my romantic mind, which very much likes the idea of drinking something made from ancient water stored in massive, heart-breaking majestic icebergs.

I'm not the only one smitten by these monoliths. In Newfoundland, whence the iceberg water for my vodka came, iceberg tours are big business, while iceberg water itself, in plain bottled form and for use in high-end vodka, is a small but growing industry. Canadian Iceberg Vodka Corp. produces around 200,000 cases a year, up from the few thousand cases 20 years ago, says President and CEO David Meyers.

Typically, bottling companies measure impurities in water in units of parts per million. "We measure impurities in parts per quadrillion," he says proudly, adding that iceberg water is about 10 times less acidic than regular bottled water, leading to its smoothness. But at the end of the day, he says it's "the story that attracts people to the brand."

That story is, in many ways, of the iceberg hunters who've become the modern-day cowboys of the North and South Poles, with reality shows and news articles documenting the unique art of lopping off pieces of massive ice mountains that will be crushed into luxury water.

Humans have been drawing up fantastical plans to wrangle icebergs and subdue them for our use since at least the mid-1800s, when entrepreneurs announced their intention to drag icebergs to India, where the ice could reportedly fetch 6 cents a pound, and to "the southern ocean, for the purpose of equalising the temperature of the earth." In the mid-1970s, scientists from 18 countries gathered at a conference in Ames, Iowa, to contemplate how to tow icebergs to the Arabian Peninsula and other arid regions to be used as a water supply. It never happened, because the technology at the time couldn't manage the tricky feat in a financially feasible way, but scientists are still examining similar plots today. For now, though, it's all still a techno-fantasy.

BY
ZOË SCHLANGER
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BABY 'BERG: Kean and Philip Kennedy fish an iceberg out of Bonavista Bay, Newfoundland, to use for their own drinking water as they hunt for bigger icebergs to sell to water bottlers and vodka makers.

But what Ed Kean, iceberg hunter, does every day is no dream. He's one of a clutch of men making a living chasing icebergs at the top of the world with a grappling arm and plenty of caution.

"Imagine a time when the earth was pure. And imagine a time, tens of thousands of years ago, when all of earth's water was original, untouched and absolutely perfect. Imagine water absorbed by the clean atmosphere, and then falling as snow," reads copy for Glace Iceberg Water, one bottled-water company that Kean sells his bounty to each year. Indeed, these

icebergs are between 10,000 and 20,000 years old. They're chunks of ice cracked off from the Petermann Glacier on the massive Greenland ice sheet, the product of many years of falling snow compacting and moving, thanks to gravity, toward the sheet's edges. Eventually, the ice breaks off into huge pieces roughly 250 million tons each. That's the equivalent of 1,000 skyscrapers, or the weight of all the trash Americans produce in a year. These icebergs travel between three and five years to their final destination, first flowing south, then slingshotting

CRUSH ON YOU: Heavy machinery is used to harvest an iceberg. Kean and his shipmates harvest about 1,000 tons of ice per year, which becomes between 264,000 and 343,000 million gallons of water.





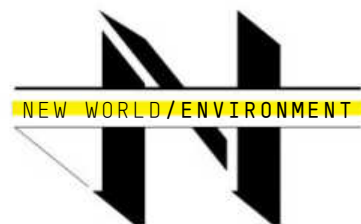
north with the currents to Baffin Bay, off the southwest coast of Greenland, and then again flowing south, to Newfoundland, where they settle into what's called "iceberg alley."

Anywhere from between three to 600 icebergs make their way through iceberg alley each spring, growing smaller and smaller from April through mid-July until finally melting away completely by late summer off the coast of St. John's, Newfoundland's quaint seaside capital. Just before that happens, Kean makes his harvest. This year, Kean says he saw a bumper crop of 'bergs, far more than normal—he thinks global warming might be a factor but is reluctant to lay all the blame there, due to variations from season to season that he's seen. Climate change has certainly brought more attention to his trade, he says, noting that "more than 30" camera crews have come to record his unique workday over the past few seasons.

Kean has a permit to harvest icebergs from Newfoundland, much like one might have a permit to hunt or fish. He works with a small crew on a 180-foot barge, outfitted with a grappling arm that bites off enough ice with each chomp to yield 1,000 liters of water. All told, Kean and his shipmates harvest about 1,000 tons of ice per year, which crushes down to between 264,000 and 343,000 million gallons of water. Next to a full iceberg, which can be anywhere between 100 million and 250 million tons, that's a drop in the ice bucket.

Newfoundlanders like to say they get their life from the sea. They are a marine people, living on a rock of an island off Canada's Atlantic Coast and surviving on the fishing industry there—until the early 1990s, when the island's centuries-old cod fishery collapsed, immediately putting 40,000 people out of work. They've since had to find other means. Kean was one of them. "I've been around icebergs since I was big enough to work," he says. He remembers hauling slabs of iceberg onboard to keep his catch of cod, Atlantic salmon and Arctic char cold for export. After the collapse, Kean first turned to monitoring icebergs for local university researchers, helping gather the data they used to try to predict the path of the 'bergs. Then came the vodka and bottled-water companies.

It can take weeks for Kean's team to find the ideal 'berg to bite. They have to be careful: If the visible part of the iceberg is around 10 or 15 cars' worth of mass, they can expect another 100



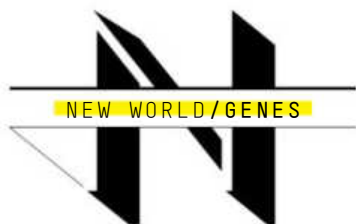
cars below the surface. If that iceberg "rolls"—flips over—the results could be disastrous. "They could sink your boat, sink your barge and sink the *Titanic*," Kean says, laughing. "We've had a few close or dangerous scenarios.... The iceberg battle is unique." Véronique de Viguerie, a French photojournalist who spent 10 days on Kean's vessel taking the photos that accompany this story, heard a thing or two about those near misses. In 2013, the crew said, an iceberg flipped unexpectedly, causing a small tsunami that came close to inundating the ship, she says. As de Viguerie accompanied them on the hunt, she heard them speculate on the safety of each piece of ice. "She looks dangerous. She can sleep," she heard them say, referring to the icebergs always with female pronouns.

The team has learned to avoid icebergs that have "legs," the curious limb-like protrusions,

"IMAGINE A TIME WHEN ALL OF EARTH'S WATER WAS ORIGINAL, UNTOUCHED AND ABSOLUTELY PERFECT."

like massive ice tentacles, that sometimes appear above water as the iceberg melts. These can give the floating 'bergs a less stable center of gravity and make them more likely to roll.

Watching Kean and his team pull massive, ancient hunks of ice through channels lined by the sparse, rolling Newfoundland coast, it's easy to imagine the world it fell on (as snow) tens of thousands of years ago. In a way, iceberg hunters are archaeologists, unearthing these ancient water molecules. But Kean is less sentimental. "It's just frozen snow. Just compacted snow," he says. For him, it's just a job, a way, in Newfoundland to still live off the sea. Besides, he says, "they're just going to melt anyway." When the sea gives you ice, you might as well drink it. ■



THE SLICE OF LIFE

Using CRISPR, scientists were able to cut out a defective gene responsible for muscular dystrophy

IN 2015, THE GENE-MANIPULATION technique known as CRISPR-Cas9 captured the fervent attention of the research world—and the general public—by successfully crafting malaria-proof mosquitos and muscle-bound beagles. It's a biology game changer, with the potential to create crops that can feed the planet and animals that protect humans from disease and, possibly, cure genetic diseases.

It's such a hot subject that last year three separate groups of researchers embarked on studies to see if they could use CRISPR-Cas9 to solve Duchenne muscular dystrophy. All three used the same harmless virus (the adeno-associated virus, or AAV) to inject the CRISPR-Cas9 gene-editing system into living mice, in an effort to snip away one of the genetic mutations thought to be responsible for DMD. All three research projects were resounding successes, setting the stage for CRISPR cures.

CRISPR is an acronym for "clustered regularly interspaced short palindromic repeats." Found in many microorganisms, it's a segment of DNA that repeats itself, and between repeating sections, it stores bits of DNA collected from past viral foes. These act as a rudimentary immune system: When the microorganism comes across that virus again, its Cas (CRISPR-associated protein) springs into action and very precisely attacks the hapless invader, slicing its DNA into ribbons. Scientists discovered they could rejig-

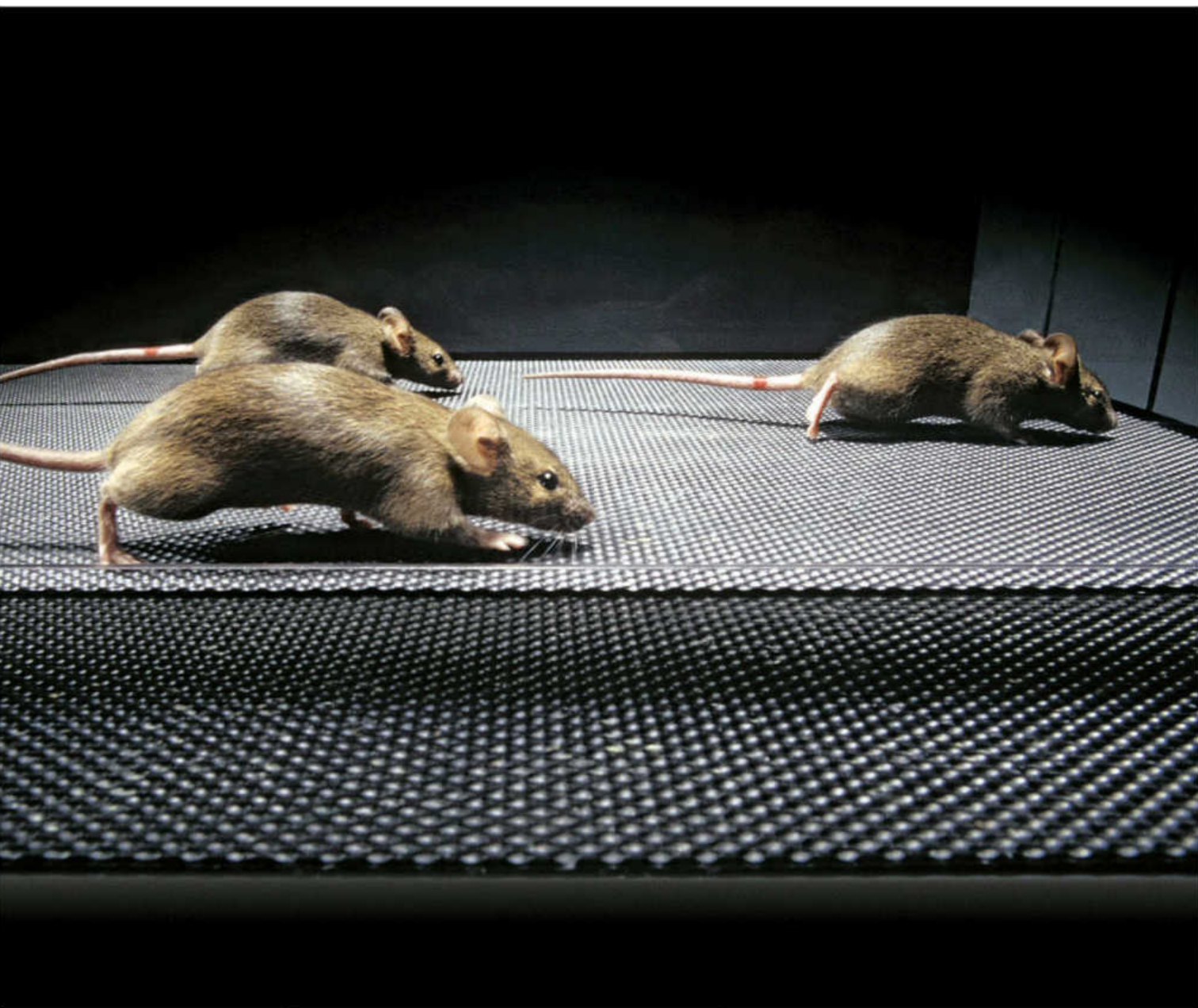
ger the CRISPR-Cas system to target almost any piece of DNA, allowing them to precisely edit the genes of a cell. The scientists working on the recent DMD studies all used a modified CRISPR-Cas9 system, one with a sleeker Cas9 protein able to fit itself inside the AAV. The virus, geared specifically to infect muscle cells, would then deliver the system to the DNA of those cells. The target: one of the DNA regions containing instructions to make the protein dystrophin.

Dystrophin, which ensures muscle stability, is thought to be one of the keys to DMD, a genetic disorder affecting approximately 1 in every 5,600 to 7,700 males, ages 5 through 24, in the U.S. (Muscular dystrophy describes any number of conditions that result in the progressive degradation of muscle throughout the entire body; DMD is the most severe and well-known.) In those afflicted with DMD, production of dystrophin ceases. DMD patients—almost always boys, since the gene responsible is found in the X chromosome and girls can be healthy living with one mutated version and one normal copy—have an average life expectancy of 25, thanks largely to their deteriorating heart and skeletal muscle. They invariably lose their ability to walk long before then.

However, if a treatment could jump-start a DMD sufferer's dystrophin production to even 20 to 30 percent of the level found in healthy

BY
ED CARA
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SMALL FOOTSTEPS: Researchers are testing the CRISPR gene-editing technique to treat genetic diseases in live mice. If successful, they'll move on to larger mammals and, eventually, humans.

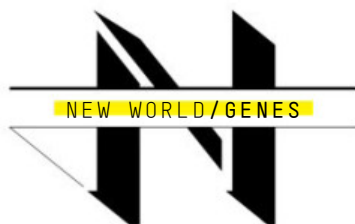
individuals, it's believed they could live a symptomless life. Even a 4 percent boost in dystrophin—which would get DMD patients to levels seen in people who suffer from less severe forms of muscular dystrophy—could add years to their lives, along with less heart damage and fewer overall symptoms.

In the three mice studies—all published in the journal *Science* at the end of 2015—the researchers attempted to delete exon 23, one of the 79 exons, or protein-coding stretches of DNA, in the dystrophin gene. The goal was to give the gene the ability to create a “truncated” but functional version of dystrophin.

The first study, led by Christopher Nelson of Duke University, found that injecting the

THIS IS THE FIRST TIME CRISPR HAS BEEN SUCCESSFULLY USED TO TREAT GENETIC DISEASE IN LIVE ANIMALS.

CRISPR-editing software into the lower leg of mice subjects led to the deletion of exon 23 from 2 percent of affected muscle cells; that in turn restored dystrophin levels to about 8 percent of normal production. The “cure” lasted for about



six months. A second study by a team led by Amy Wagers at Harvard used fluorescent markers to better track the same gene-editing process. They found similar improvements in muscle cells directly infected by the virus and, more crucially, evidence of exon 23 deletion in the satellite cells nearby as well. These satellite cells act as muscle stem cells, according to Wagers.

“[I]f gene editing did not occur in satellite cells, then every time the muscle was damaged and satellite cells were activated to contribute to muscle repair, the new nuclei added to fibers would still contain the original DMD mutation, which does not produce a functional dystrophin protein,” Wagers says.

In other words, it turns out that this CRISPR therapy can actually “create a pool of regenerative cells” that continue to provide dystrophin for long stretches of time. That’s a decisive advantage over other potential gene treatments that might repair a person’s specific DMD mutation but would likely need to be given very regularly. “The benefit of gene editing over other gene therapy techniques is that it can permanently correct the ‘defect’ in a gene rather than just transiently adding a ‘functional’ one,” says Chengzu Long, lead author of the third study and a researcher at the University of Texas Southwestern (UTS).

A previous experiment led by Long demonstrated that a similar technique, performed on mouse embryos, would eliminate exon 23 from 80 percent of mice eventually birthed from the embryos. But what makes his recent work (and the other two projects) especially promising is that this is the first time CRISPR has been successfully used to treat genetic disease in live animals—and thus without tampering with reproductive cells.

Though gene-editing embryos with genetic mutations has been floated a number of times in recent years, many in the research community, and elsewhere, feel it would cross ethical boundaries, potentially opening up the door to all sorts of questions about genetically modifying human embryos. (Would parents be able

to pre-empt chromosomal disorders like Down syndrome, for example? Or, taking it even further, would they be able to select the height and eye color of their child-to-be?) The current method, on the other hand, could someday allow for the treatment of those who have already come down with DMD or other genetic disorders—and avoid any ethical debate.

“One reason we have focused on sharing CRISPR gene-editing technology so widely is because it has such enormous potential to improve human health,” said Feng Zheng, an MIT researcher and one of the first to pioneer CRISPR’s use in the lab. “Studies like this one further validate the impact that CRISPR genome editing can have on medical research.”

Of course, there are many more hurdles. For example, none of the current delivery methods can pass through the blood-brain barrier, preventing dystrophin restoration in the brain. Charles Gersbach, one of Nelson’s co-authors and a Duke University researcher, says his team will continue to optimize the technique and then scale up to larger animals. These studies will test the safety of the CRISPR cure. “This will likely take years,” says Gersbach, “but if

EVEN A 4 PERCENT BOOST IN DYSTROPHIN COULD ADD YEARS TO THEIR LIVES.

successful, then clinical trials could be envisioned in the foreseeable future.”

But the research community is so jazzed about CRISPR right now that it all might happen even faster than Gersbach expects. “I think we are going to see rapid movements in the field in 2016,” says Jennifer Doudna, another CRISPR pioneer, who is at the University of California, Berkeley. There’s plenty of money being thrown into CRISPR as well: Long’s group at UTS, for instance, recently received a five-year, \$7.8 million grant from the National Institutes of Health to open up a research center dedicated to translating “scientific findings and technological developments into novel treatments for muscular dystrophy.”

DMD might just be the beginning too. CRISPR is being tested to target everything from cancer to congenital heart disease, and researchers are discovering new Cas proteins that could further expand the technique’s gene-editing capability. ■

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THE FOX IN WINTER

Is the Grand Old Party over for Sean Hannity?

+ ANCHOR MANAGEMENT ISSUES: Hannity built a fine career by being a favorite of the Republican establishment, but he's now getting outshined by Fox colleagues who aren't nearly as cuddly with D.C.

SEAN HANNITY warns me repeatedly that his lunch order will be weird. Graying but still boyish with a toothy grin, the Fox News host sits on the second floor of Del Frisco's steak house, across the street from his office in midtown Manhattan. The "weird" lunch he orders consists of scrambled eggs with onions and a dash of bacon. Usually, Hannity explains, he would order a thick steak.

"I'm just on a really strict regimen right now, because I'm working out so much," he says. The conversation moves to his workout routine, specifically his passion for mixed martial arts. "I hit the heavy bag. I hit the mitts. I do a lot of core."

Hannity turns to a waitress as she fills up his glass of water. "We're talking about my MMA workout." She nods. "He's interviewing me," he adds. "He's part of the liberal media, so be careful."

"How's that going for you?" the waitress asks Hannity.

He doesn't have to answer because it's obviously been going really well for Sean Hannity

since 1996, when he was handpicked by Fox News Chairman Roger Ailes as part of the original team that redefined cable news. In an industry once dominated by the ostensibly non-partisan CNN, Fox torpedoed the unspoken standard that news should be impartial, tapping into an audience thirsty for conservative commentary. Under Ailes's tutelage, Hannity became a sensation, delighting viewers any time he filleted his squishy co-host, Fox's house liberal Alan Colmes, before going solo in 2008.

Hannity stood out, even at Fox, as the GOP's man inside the network, unloading on Democrats while cultivating access to the Republican Party. Unlike Bill O'Reilly, who gleefully strays from party positions—he supports climate change action and opposes the death penalty, for example—Hannity is reliably loyal to the GOP. He's mastered the swagger of the right-wing shock jock, whether by comparing Black Lives Matter activists to the Ku Klux Klan or telling a female guest to "follow the bouncing ball" while he explains terrorism to her.

BY
BRENDAN JAMES
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But in 2013, at the middle of Barack Obama's tenure and a time of peak rabble-rousing for conservative pundits, Hannity got bumped from 9 p.m. to 10 p.m. Megyn Kelly, a rising star at Fox News, took over his old slot, while O'Reilly retained his 8 p.m. throne. These days, although more than 2 million viewers tune in to *The Kelly File*—the kind of numbers *Hannity* used to get—half a million switch off when she's through, leaving Hannity with 1.5 million viewers.

In a crowded Republican primary season seemingly tailor-made for Hannity, so far it's been Kelly in the spotlight. She's earned monster ratings and critical praise from both liberals and conservatives for her stint as a presidential debate moderator this summer, especially for the way she held her own against the bizarre attacks of GOP front-runner Donald Trump. Finally, in January she appeared in *Vanity Fair* with a laudatory profile. "Don't Mess With Megyn Kelly," the cover blared, "Fox News's Brightest, Toughest Star."

Hannity pauses before addressing Kelly's takeover of his slot. "Best thing that ever happened to me," he says finally. Asked whether he feels he's being eclipsed, he simply replies, "She's a huge star." But where does that leave Hannity? Still a key name at Fox, no doubt, but no longer the king of cable.

You wouldn't know it from his crew, though. However loathed he is by liberals, his baby-faced bravado has made him an apparent favorite among Fox employees. After lunch, at a pretaped segment in Fox's Studio D, a makeup artist spends at least two minutes explaining how Hannity is the nicest man in show business.

"Yeah, Hannity's a hoot," says Lou, one of his cameramen. "One time he challenged me to do a hundred pushups." Lou turns to Hannity, who is wiring up his mic to film a taped segment, his blue jeans visible underneath his desk. "How many was it? A hundred?" The mere mention of this incident brings Hannity to the middle of the set, where he challenges the crewman to a brief rematch. They both drop to the floor and start pumping out pushups, Hannity clapping his hands in between reps, Travis Bickle-style.

During the George W. Bush years, Hannity staunchly defended the administration and



Republicans in power. But ever since 2009, after Obama entered the White House and the Tea Party movement tapped into popular resentment toward the Republican establishment, Hannity has styled himself as a mad-as-hell right-wing dissident. "There's a *Washington Post* poll," he says at lunch. "I often cite it on my show: Sixty percent of Republicans feel betrayed by Washington Republicans. And I think for good reason." (After



**STRANGER
BEDFELLOWS:**
Hannity ran a dating
site for right-
wingers, and claims
he has a 90 percent
success rate as a
matchmaker.

contacting Fox for a link to said poll, I find it's actually an in-house Fox News poll.)

Flashing his badge of independence, Hannity says he registers as a capital-C Conservative, not a Republican. Yet for all his populism, he doesn't ever use his influence to lay a glove on the GOP. Conservative political consultant Matt Mackowiak has noticed the host's lack of initiative. "He complains about leadership a lot. He parrots

the conservative base, but he doesn't have a real issue he focuses on. You don't see him using his influence for a policy outcome."

Of course, that's not how Hannity sees it. "The country is going down the shitter," he says at lunch, his voice rising while his plate of eggs gets cold. "I want to be one of the spokes in the wheels, pushing the ideas that will help save the country." What follows is a monologue seemingly pieced



together from bits of his radio and TV shows, evoking great men of American history and the dream of a better tomorrow. “Reagan said, Is it a third party we need? No, it’s a revitalized second party with no pale pastels but bold differences.”

Asked to place himself on a spectrum of conservatism, Hannity bristles. “I don’t, I don’t—you know, that’s a narrative that the left advances.” OK, but which of the Republican presidential candidates’ positions does he disagree with? No dice. What could one of them do to lose the Hannity vote? “Nice trick,” he says instead of answering the question.

A picture emerges of a conservative who wants to be loved rather than feared. Over the course of one lunch, he manages to say something positive about nearly every Republican contender. Florida Senator Marco Rubio “will be president someday.” Senator Ted Cruz completely schooled the media during the raucous CNBC debate. Governors John Kasich, Bobby Jindal and Scott Walker have all done “an outstanding job.” Jeb Bush, who has plummeted from double to single digits in the polls, is merely “underperforming.” Rick Perry has “a great record” and was unfairly laughed out of politics for one silly debate flub.

And don’t get him started on his good friend Donald Trump, whose brand of neckties he flashed during a taping of his show after our lunch.

In stark contrast, last year his fellow Fox personality Laura Ingraham waged a successful media campaign to oust then-House Majority Leader Eric Cantor from power. Also that year, O’Reilly made an unrelenting and public case for “Kate’s Law,” writing an open letter to then-House Speaker John Boehner and Senate Majority Leader Mitch McConnell pitching the draconian immigration bill.

That’s the kind of blood sport Tea Partiers want, but Hannity won’t play that game.

Still, what he lacks in radical cred he makes up for in marketability. Take his “Hannitization” live radio tours or his website’s catalog of neckties the host has worn during interviews: “HanniTies.”

There was also his dating website for right-wingers, the now-defunct Hannidate. “Many people got married,” Hannity says confidently of the site. “I don’t know the whole number, but a lot.” The

site was billed as “the place where people of like conservative minds can come together to meet. It’s fun, interactive, safe and anonymous—until you decide to take it further.” In fact, Hannity confides that sometimes, when he’s traveling the country or bored during book signings, he will put “cute couples” on the spot and pressure the man into proposing to his girlfriend. “I have a success rate of about 90 percent.”

But will he ever put that kind of pressure on a politician? Hannity denies he takes it easy on the powerful. “My role is not to tell my audience who to vote for. I give my audience access to the candidates they are considering and respect them enough to let them make their own decision.”

Mackowiak puts it differently. “He wants to be able to get the guests he wants, when he wants them,” he says. “He wants to have exclusives.”

At one point during lunch, Hannity seems to confirm his priority is show business, not impact journalism. “I am a conservative, but I consider myself a talk show host. If you ask me, Am I a journalist? No. Advocacy journalist? You could say that, but I consider myself a talk show host.”

As Kelly and Fox News win praise this election season for challenging candidates with tougher, more pointed questions, Fox is capitalizing on the Republican Party’s fractured state, which

“I CONSIDER MYSELF A TALK SHOW HOST.... AM I A JOURNALIST? NO.”

leaves Hannity possibly damned by his proximity to the GOP. Asked what he would do if and when he parts ways with Fox, Hannity says, “Probably drive around in the car, talk to myself for three hours a day.” When the question comes up again, he looks annoyed. “I’m 53. I’m young. I’m healthy. I’m not thinking about anything in the future.”

As I watched him tape his closing monologue for that night’s show, I realized Hannity was repeating, almost word for word, the answers he gave me during lunch. The “*Washington Post*” poll. The Reagan quote about bold colors. The call for new conservative solutions. Much like a politician, he’s delivered these bromides so many times.

Back from commercial break, with a few seconds to go as the graphics of the show’s bumper swirled on the TV monitors, Hannity squinted at me through all the lights and machinery and whispered, “What if I’ve got nothing to say?” **N**

TWO QUESTIONS WITH LEAD SAVAGE JEHNNY BETH

The post-punks in exile return to civilization on this month's *Adore Life*

THE SAVAGES GUIDE to avoiding the sophomore slump, were it to be inscribed in a gleaming black binder owned by the acclaimed London post-punk band, might look something like this: First, embrace isolation. Spend roughly six months in a studio in the city's northwest, minimizing human contact and constructing intense, nervy songs about vulnerability and the darker side of love. Next, unleash the songs-in-embryo on the world by crossing the Atlantic and playing nine shows in poorly ventilated clubs during a cold and bleak New York January. And then, finally, record your album.

Although Savages won widespread praise and a Mercury Prize nomination for its 2013 debut record, *Silence Yourself*, the band eschewed comfort for its follow-up, *Adore Life*, dropping January 22. A year after attending all nine of the aforementioned performances in a feat of endurance and winter-borne mild insanity, I spoke with the group's lead vocalist, Jehnny Beth, a French

singer who honed her underground cred with the duo John & Jehn and the label she co-founded, Pop Noire.

Beth spoke to *Newsweek* about Savages' frightening lyrics and what it was like to play at Banksy's satirical "bemusement park," Dismaland.

You sing in one song on your new album, "Love is a disease / The strongest addiction I know." What made you write about love in such a frightening way?

If I was going to write about love, then I was going to write about the byproducts of love as well. The things that we do, the things that we say that we might be ashamed of. I've always been interested in the dark side of things. I started writing very

hopeful lyrics, with very warm intentions. That was coming from the experience of touring the world with *Silence Yourself* and meeting our crowd and receiving such warm affection from them. That definitely changed us. It really touched us, and it had an impact on my writing. So I started off writing a lot of very hopeful and positive lyrics. [But] I wanted to talk about the other side of it. If you're experiencing a feeling of love, you're also experiencing anxiety or fear of being abandoned or jealousy.

There's a song on your album called "Sad Person." It reminds me of how sad memes on Tumblr are very popular. There's a Twitter account called @sosadtoday. Are you

familiar with any of that stuff?

No, I'm not! [Laughs] Are they funny? No, [the song] has nothing to do with that. But I like that you made a connection with it. There's a really good Twitter account, it's called @getinthesea. It's hilarious. Someone would pick on a horrible fashion thing or anything that doesn't make sense—absurd consumers or sometimes political values. And every time it finishes a tweet with "Get in the fucking sea" or "Get her in the fucking sea." I like that kind of humor. It reminds me of the humor we found when we played Banksy's Dismaland and the idea of all the staff acting totally fucking miserable. Which is kind of a relief—instead of a culture of always trying to smile. **H**





SAVING BEDLAM

The effort to preserve the country's historic mental hospitals isn't as crazy as it sounds

THEIR VERY NAMES—Northern Michigan Asylum for the Insane, Trans-Allegheny Lunatic Asylum, Alabama Insane Hospital—conjure images of dark, dank psychiatric snake pits. The buildings, long abandoned, litter the American suburbs as enormous, dilapidated and graffitied relics of a failed 19th-century mental health system that the country is eager to forget. So why would people clamor to save these giant

former homes for the so-called insane?

Perhaps no one living has a better answer than Robert Kirkbride, associate dean of constructed environments at the Parsons School of Design in New York. His forebear, Philadelphia physician Thomas Story Kirkbride, provided the conceptual blueprint for the buildings in an 1854 book. The Kirkbride family name has been linked with psychiatric hospitals ever since.

BY
DAN HURLEY
[@Get_Smarter](#)



FAULTY TOWERS: The unused main building of Greystone Park Psychiatric Hospital in New Jersey, before it was expensively demolished in October 2015, amid protests from preservationists and historians.

Thomas Kirkbride believed that compassionate care for the mentally ill could completely cure them in a matter of months. Working as a psychiatrist before the medical specialty was even recognized as such, he envisioned large, airy rooms with plenty of direct sunlight and opportunities for bowling, farming, swimming, dancing and dining—a design historians have come to call the Kirkbride Plan.

“The beauty of the buildings was meant to be part of the therapy,” Robert Kirkbride says. “The buildings were not just a place where you stuck people but were part of the treatment itself. It was an infrastructure of the mind that helped to bring healing.”

In early 2015, the younger Kirkbride joined efforts to preserve the buildings in the aftermath of the much-protested decision to demolish Greystone Park Psychiatric Hospital in Morris Plains, New Jersey. Originally named the State Asylum for the Insane, the 673,700-square-foot building boasted a massive foundation that was supposedly the largest in the U.S. until the construction of the Pentagon in 1943. Its most famous patient was folk singer Woody Guthrie, who resided there beginning in 1956 after the progressive neurological disorder Huntington’s disease left him disabled.

Despite the fervent protests by Guthrie’s daughter Nora and a group of local activists, Governor Chris Christie insisted Greystone was beyond repair. State officials fought off court challenges and ignored critical news coverage and detailed proposals from seven companies offering to redevelop the building at their own expense. In the summer, New Jersey issued a \$50 million bond to fund demolition, and in late October the building’s last remnant—the dome of its central administration building, where ravens once perched as though awaiting a visit from Edgar Allan Poe—came crashing down. Nevermore, indeed.

But the impending demise of Greystone became an unlikely turning point for efforts to save the country’s psychiatric hospitals. Simultaneous protest marches were held in the spring in front of Greystone and at the site of a state hospital in Traverse City, Michigan, and within months the 34 remaining buildings had their first national advocate group, PreservationWorks.

Robert Kirkbride became a spokesman and joined the group’s board. “Having all these people talking about ‘Kirkbride’ buildings was humbling,” he says. “I didn’t ask for my name, but if that helps me preserve and adapt these historic structures, and bring respect to the stories of the people who lived and worked there,

then I’m pleased to do that.”

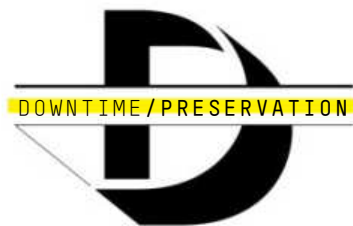
“Greystone’s demolition came as a big shock,” says Christian VanAntwerpen, the photographer and musician who founded PreservationWorks. The organization came about after VanAntwerpen saw the response to a national conference he had organized in April, which Kirkbride attended and centered on discussions on how best to save the buildings. Fittingly, the meeting was held at the former Traverse City State Hospital, which has been transformed over the past 10 years into a mixed-use development known as the Village at Grand Traverse Commons.

Raymond Minervini, whose family’s company bought the site in 2002, says he understands why many people think the gargantuan structures are eyesores. In fact, the company’s name, now the Minervini Group, was originally White Elephant Redevelopment. “Every town has a white elephant,” he says. “It takes someone willing to put their life savings on the line, like my dad did, to save them. But it also takes a community with vision.”

Minervini sees the demolition of Greystone, and the threat still faced by other Kirkbride buildings, as a creative failure by local officials.

KIRKBRIDE BELIEVED COMPASSIONATE CARE FOR THE MENTALLY ILL COULD CURE THEM IN A MATTER OF MONTHS.

“Nobody will ever go visit a historic marker that says, ‘In this place once stood the largest building in America.’ All these Kirkbride properties, because they’re so massive and built almost 150 years ago, are hard to adapt,” he says. “My father had an appreciation for historic structures. He thought it would be a tragedy if we allowed this building to decay. He had a profit motive too, but he was trying to do well by doing good.”



The success of Grand Traverse, says Kirkbride, proves that redeveloping the properties “is not just a crazy idea. It shows how these buildings can be cherished and updated with imagination and poetry and real pragmatism.”

Informed by his scholarship focusing on the connection between architecture, memory and cognition, Kirkbride says the buildings’ histories are just as important as their utility for redevelopment.

The rise of the psychiatric mega-building can be credited not just to Kirkbride’s relative but also to Dorothea Dix. In 1843, Dix, a nurse, appeared before the Massachusetts Legislature to talk about her two-year investigation into the appalling conditions in which towns kept their mentally unstable residents. In one village, she reported, the owner of an almshouse told her that a “lunatic” woman was kept in the cellar. She found the woman chained under the cellar stairs: “In that

contracted space, unlighted, unventilated, she poured forth the wailings of despair. Mournfully she extended her arms and appealed to me: ‘Why am I consigned to hell?’”

Chastened, the legislators voted to fund the construction of a proper hospital, and Dix went on to mount similar campaigns in other states, trying (unsuccessfully) to gain a federal endowment for them. Still, awakened by Dix’s moral fervor, states from California to Connecticut erected 75 mental hospitals over the following decades, designed in the style of the Kirkbride Plan, which called for a central administration building with wings set back at a slight angle, zigzagging at regular intervals to assure maximum sun exposure for each small unit. Most patients, Thomas Kirkbride insisted, would soon recover and return home.

Of course, things didn’t work out as he and Dix intended. The treatment of mental illness, then as now, requires more than good intentions

TOURIST TRAP:
An iconic mental hospital, the Trans-Allegheny Lunatic Asylum in Weston, West Virginia, is now being marketed as a historic site and paranormal tourist attraction.



and big windows. Virtually all the institutions had doubled and redoubled again their supposed maximum capacities by the mid-20th century, leading to overcrowding and abuse. Then the advent of antipsychotic drugs in the 1950s and the deinstitutionalization movement of the 1960s led to most of the buildings being emptied out and abandoned.

Today, only 34 of the original 75 buildings still stand. In part as a result of the deinstitutionalization movement, more people with serious psychiatric illnesses are now incarcerated in America's prisons than are receiving treatment in psychiatric hospitals.

"It's terribly ironic that care for the mentally ill has come full circle," says Kirkbride. "We're back to where we were before Thomas Story Kirkbride conceived of these buildings."

That failure to remember the hospitals' dark histories drives the effort to maintain them. Some of the most passionate people fighting for preserving the buildings are, like Nora Guthrie, former friends and family of people who lived in them. They see the buildings as living memorials to the care, and the suffering, of their loved ones.

Laurie Mullen, 58, of Fergus Falls, Minnesota, grew up two blocks from the local psychiatric hospital that was home for 23 years to a woman whom Mullen came to love like a grandmother.

"Lilly was admitted to the hospital in the 1940s for postpartum depression," Mullen says. "Within a year, her husband had remarried and given up their two daughters to different families."

In 1963, Mullen's grandparents signed Lillian Cushman out of the overcrowded hospital, called the Fergus Falls Regional Treatment Center, and hired her to do housework around their nearby farm. "To me," Mullen says, "she was another grandparent, and I loved her."

Cushman reconnected with her daughters, but her closest companion became Mullen, who sat at her bedside when Cushman died at the age of 98 in 2012.

"We can tear these places down and try to erase that part of our history," Mullen says, her voice breaking, "but it's wrong. It's wrong."

When her City Council announced plans 11 years ago to tear down the turreted, castle-like hospital where Cushman had been confined, Mullen was so outraged she paid for radio commercials to organize opposition. Joined initially by dozens of local residents, and more recently by PreservationWorks, Mullen's battle to save



the hospital has so far been successful—but just barely. Still empty, its roof leaking, the property had its first big break in decades in 2015, when it was finally earmarked to receive \$4.4 million in state funds to secure it from further decay.

Thanks to the unpaid efforts of volunteers like Mullen, VanAntwerpen and Kirkbride, the country's abandoned psychiatric hospitals are finally finding, well, asylum from the wrecking ball.

The latest news of reprieve comes from Ohio, where the former Athens Lunatic Asylum, built in 1864, has won the promise of a second life from Ohio University, which owns the property. The university's board of trustees voted on October 16 to approve what it calls the Ridges Framework Plan to preserve and redevelop the building and others surrounding it. As a first step, the university is fixing leaky roofs and shoring up the

"NOBODY WILL EVER GO VISIT A HISTORIC MARKER THAT SAYS, 'IN THIS PLACE ONCE STOOD THE LARGEST BUILDING IN AMERICA.'"

buildings' exteriors at a cost of \$300,000.

Work also began last year on the former Buffalo State Asylum for the Insane, now known as the Richardson Olmsted Complex, to turn it into a hotel, restaurant and conference center.

For Kirkbride, the second chance at life for the hospitals his ancestor designed is not just about remembering history and preserving architecture but also about overcoming the prejudice that still hinders the care of people with psychiatric illnesses—all while saving money.

"It's appalling that for essentially the same taxpayers' money that is restoring Buffalo's asylum, they tore down Greystone," he says. "People may have been ashamed of these buildings, but we have to get beyond that. Saving these buildings is part of getting beyond that." ■



THE CURATED LIFE

THE CASHMERE PHILOSOPHER-KING

Autodidact Brunello Cucinelli thinks intensely about the world we, and his beautiful knitwear, inhabit

“THE NATURE OF Theophrastus and of the Franciscan Monks is *Nature naturans*, Nature untouched by man, one that nurtures and heals without asking anything, as sung centuries later by Giordano Bruno and Baruch Spinoza.”

There cannot be many autumn/winter 2016 fashion catalogs that invoke a Greek philosopher from the fourth century B.C., a medieval monastic order and philosophers from the 16th and 17th centuries—and that’s just in the first paragraph.

But then Brunello Cucinelli is not just any fashion designer. To get the most out of his seasonal brochures, it helps to brush up on your Aristotle, have a rudimentary knowledge of Virgil’s *Eclogues* and be prepared for a few intriguing allegorical twists and turns.

What all of the above means in fashion terms is that this winter is about “natural luxury” in neutral tones, with an accent on layering. But then pretty much every Cucinelli collection is about natural luxury in neutral tones, with an accent on layering.

What makes Cucinelli’s clothes different is the man himself. Whereas standard fashion house procedure would be to corral the celebrity star of the moment and transform him or her into a brand ambassador, Cucinelli invokes the spirit of John Ruskin (spring/summer 2014)—and also manages to attract James Bond. Daniel Craig likes the brand so much that he wore a brown Cucinelli suit in one of the scenes in *Spectre*, even

though the official 007 outfitter is Tom Ford.

The Wall Street Journal named Cucinelli the Cashmere King, but he is more like one of those philosopher princes of Renaissance Italy who, having won wealth as a *condottiere* on the field of battle (or, in his case, the pitiless world of international fashion), retires to his hilltop fastness to think, to read, to contemplate beauty and to ponder the place of man in the universe.

I first met Cucinelli some years ago, when he was busy restoring the abandoned medieval hilltop hamlet of Solomeo near Perugia, in which he had built a theater and a library, and breathed life into the old stones. I had difficulty taking it all in. I was expecting to meet a successful maker of cashmere pullovers, and instead I spent the day and most of the night talking in French (he spoke no English, I little Italian) to a man who gave the impression that he would happily give up fashion and devote himself to the study of the life and works of the likes of Hadrian, Marcus Aurelius or indeed anyone who has approached life with intelligence, humanity, compassion and humility.

He devours knowledge and the wisdom of the ancients with the voracity of the autodidact he is: the son of poor farmers. He grew up in rural Italy during the 1950s and did not encounter electric light until his mid-teens, when the family moved to town and his father worked in a cement factory. He remembers his father’s deep unhappiness with factory life; he

BY
NICHOLAS FOULKES



CLOSE-KNIT: Fashion designer Brunello Cucinelli learned to value education above all else from his father's unhappiness with factory life. Today, Cucinelli's designs are deeply inspired by the wisdom of ancient philosophers.

was humiliated there by those who thought him an uneducated peasant. It was a situation that affected Cucinelli and one that also taught him to value education above almost anything.

Cucinelli is a good-looking man with a thatch of dirty blond hair, a trim figure and a porcelain smile. As a young man, he modeled for Ellese and got involved in cashmere only because he was keen on a girl who worked in a knitwear store.


He started out making colorful cashmere for women before turning his attention to menswear, and in 1997 he opened his first store under his own name, in St.-Tropez, France. A couple of years later, he decided to branch out beyond knitwear to create the total look. "I basically took a look at my personal wardrobe, my coats, my blazers," he says, "and I tried to make them contemporary." Thus was born the look that he calls Sportive Chic Lusso: the "one-and-a-half-breasted blazer" (like a double-breasted but with a smaller wrap); the slightly too-short cargo pant rolled up at the ankle; the neutral natural palette; and, of course, the gilet.

chore work as a philosophical treatise.

At the end of the current brochure, he writes, "Prince Myshkin, when he said that beauty would save the world, was laughed at. But like many other visionaries who were humiliated by their contemporaries, he was right. Beauty will save the world: our only task is to save beauty, and we can

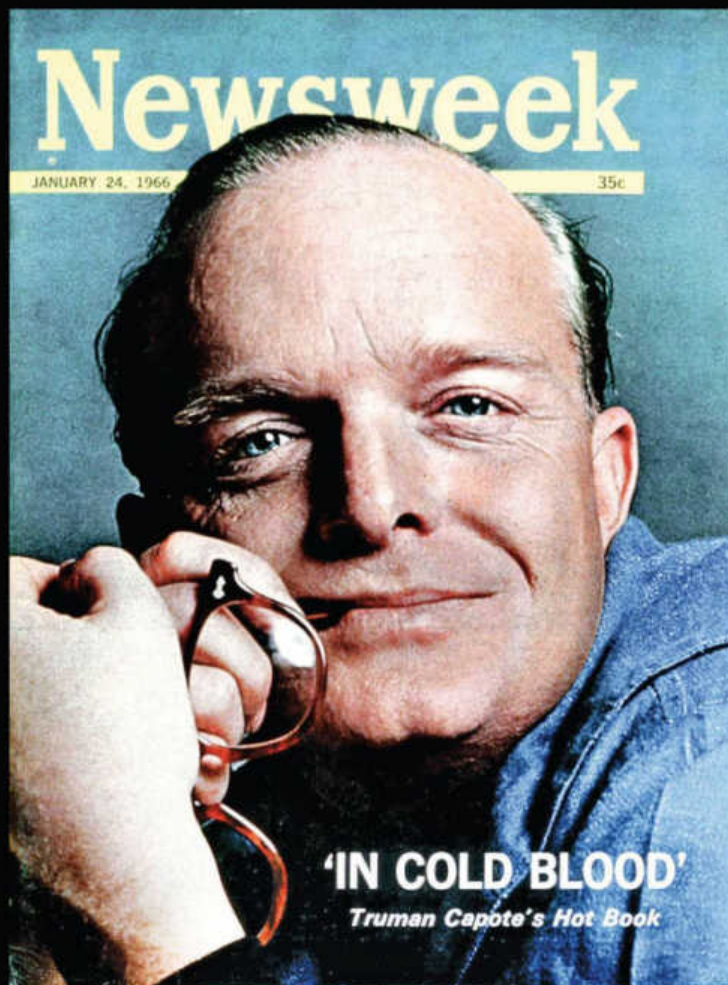
HE GREW UP IN RURAL ITALY AND DID NOT ENCOUNTER ELECTRIC LIGHT UNTIL HIS MID-TEENS, WHEN THE FAMILY MOVED INTO TOWN.

do this with simplicity and ethics, watching and learning, with courage and love, from Nature."

One lovely way to help save beauty: succumb to Cucinelli's designs as well as his prose, and treat yourself to a one-and-a-half-breasted, biker-style, stone-colored shearling gilet from his upcoming spring-summer collection. 

REWIND

50
YEARS



JANUARY 24, 1966

AN ANONYMOUS "IRATE FATHER,"
RESPONDING TO A HARVARD
PSYCHIATRIST'S PROPOSAL TO
ALLOW CHILDREN TO "PRACTICE
DRINKING" IN GRADE SCHOOL TO
BUILD SENSIBLE ALCOHOL HABITS

“My kids
have
taken
over
enough

of my life. Damned
if they're going to
get my booze too.”